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INDEX TO VOLUME 79

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This is an alphabetical index of articles and discussions arranged by leading words. It contains occasional cross references. Names of authors and men who discussed the papers are also included. Details of society proceedings, including the titles of papers

read, officers elected, etc., can be located in proceedings under Societies, Editorials, News of the State, Marriages, Deaths.

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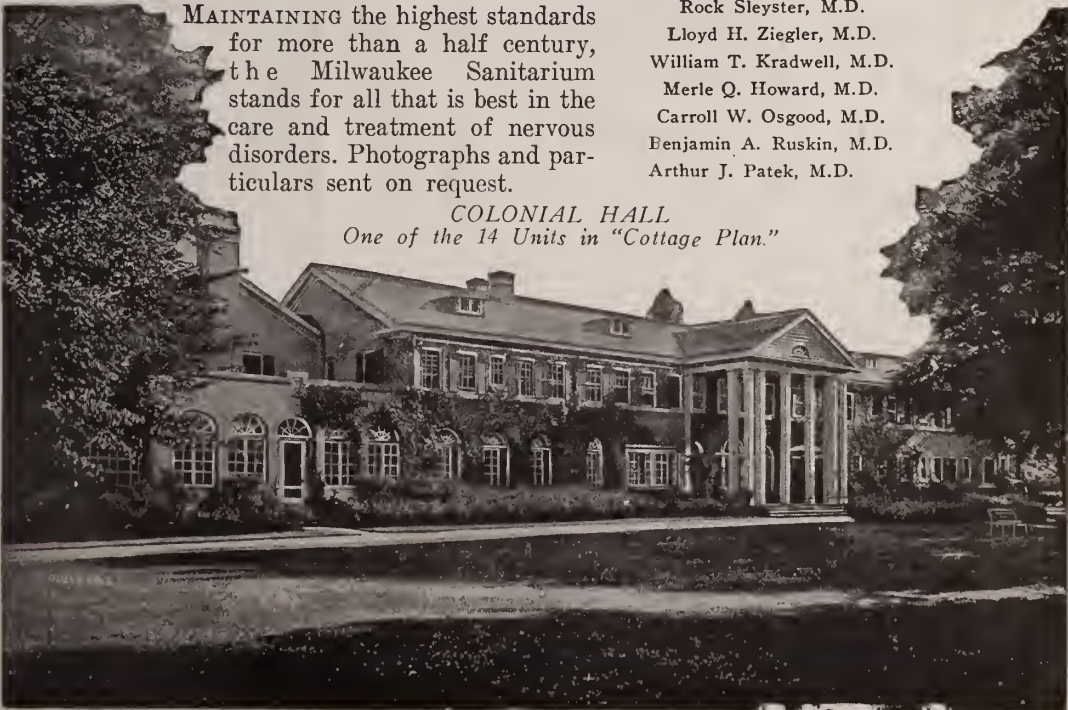
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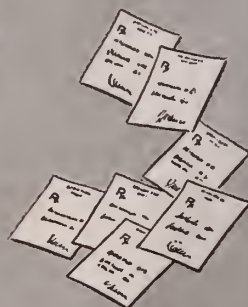
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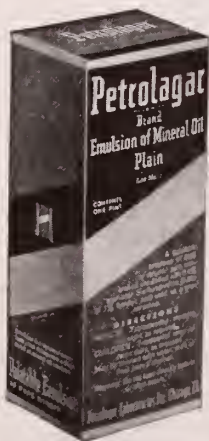
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ADVANCES IN CANNING TECHNOLOGY

I. Requirements for the Modern Canning Factory

● During the first decade of the 19th Century, Nicholas Appert, an obscure French confectioner, worked out empirically the basic principles of canning. In 1811, the first English edition of his book on the "Art of Preserving" was published (1). This text lays down the fundamentals of the canning process; it describes the necessary organization of a canning establishment and its equipment; and it lists canning procedures for more than 50 foods of both animal and plant origin.

Viewed in the light of modern knowledge, Appert's book is surprisingly complete and many of his observations amazingly accurate. Naturally, in the 130 years since his book was published, many advances have been made in canning technology. Consequently, when Appert's quaintly worded descriptions of the requirements for the use of his process are compared with those of modern commercial practice, some insight may be had as to the vast improvements which have been wrought in this important field of food preservation since its humble beginning.

One striking contrast between the old and new in canning lies in Appert's description of the necessary features of a canning establishment of his day. Appert's establishment apparently was composed of seven rooms or "apartments". Four of these were equipped to handle the preparation of fruits, vegetables, and foods of animal origin; the fifth room was devoted to the cleaning and storage of the glass bottles used as containers; the sixth room was the "sealing" room in which the bottles were corked after filling with food; the last room contained the large covered kettle in which the sealed containers were processed in boiling water.

The requirements for the modern cannery are, of course, much more exacting, both

from the standpoint of factory site, arrangement, and equipment. Today, canneries must be located close to the fields, orchards, or waters from which the raw materials are harvested. Rapid handling of freshly harvested raw stock—a prime requisite for quality of the final product—is thus facilitated. The factory site must also be chosen so that an adequate supply of potable water is available. The modern canning plant is arranged specifically for handling the product or products that will be canned. This provides for continuous, rapid, and even flow through the various operations comprising the canning procedure for the particular product.

Needless to state, the equipment requirements of the modern canning factory are also much more complex than in the days of Appert. Present-day, large-volume production—necessary for the manufacture of a low-cost product—requires the use of high-speed automatic equipment for conveying the raw materials through the cleansing, preparatory, and all other operations of the commercial canning procedure. Frequently, much of this equipment must be constructed of special metals or alloys; in all cases it must be so constructed as to permit rapid, thorough, periodic cleansing. To maintain and control this highly specialized machinery, a skilled mechanical staff is necessary.

Space will not permit fuller description of other requirements for the cannery of today. Thousands of such factories combine to form the American canning industry, whose products already have become so essential in our modern civilization and in our national defense. Commercially canned foods have fulfilled every prediction of Appert by whose "extensive practice and long perseverance" a new means of food preservation was made possible.

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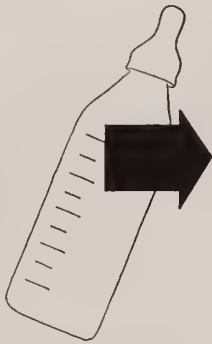
- (1). The Art of Preserving All Kinds of Animal and Vegetable Substances
M. Appert, Black, Parry, and Kingsbury, London, 1811.

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S.M.A. is consistently high in vitamins every month of the year. Each quart of S.M.A., ready to feed, contains:

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Vitamin supplements, other than the customary orange juice feedings, are usually unnecessary.

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1. Dornbush, A. C., Peterson, W. H., and Olson, F. R.: "The Carotene and Vitamin A Content of Market Milks." J.A.M.A., May 4, 1940, pp. 1748-1751.

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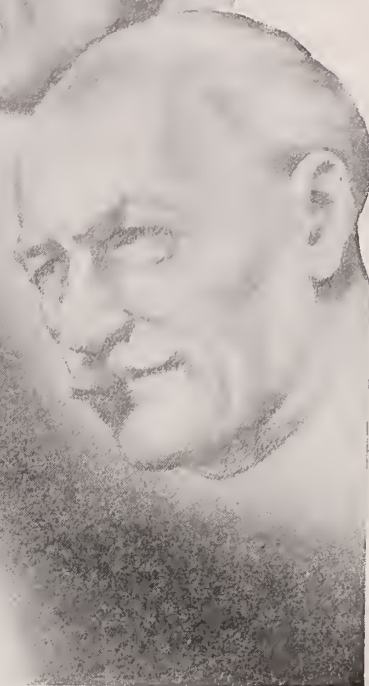
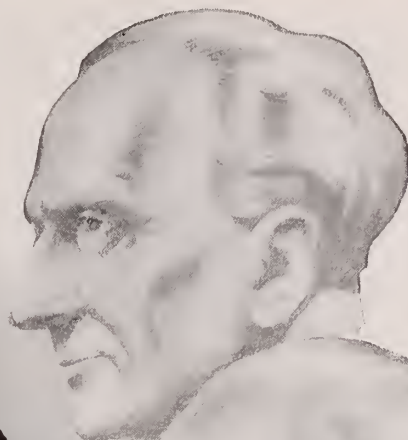
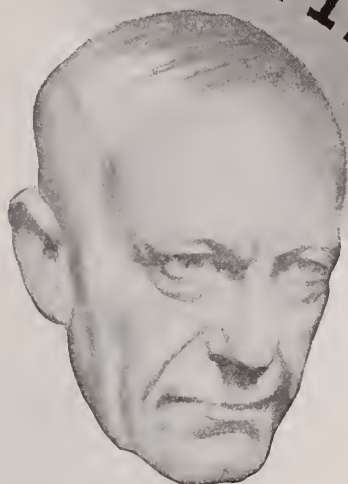
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ANTACID

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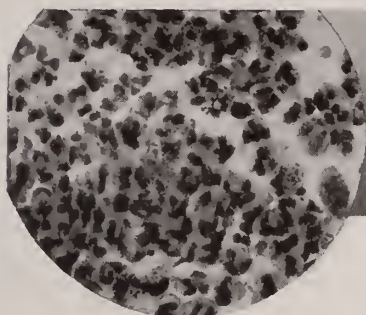
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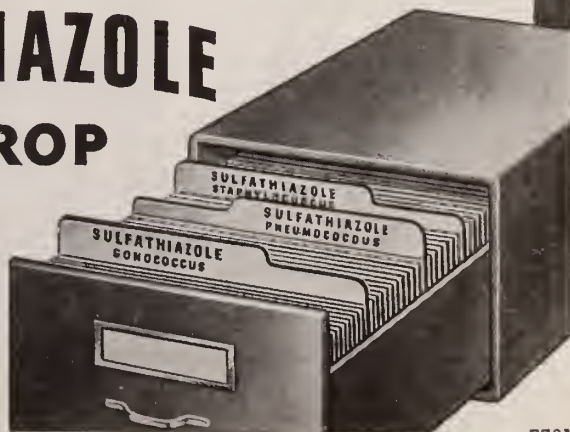
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Only contain 10% to 12% gelatine.
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KNOX GELATINE *May Help You* *With Patients Needing* **PROTEIN!**

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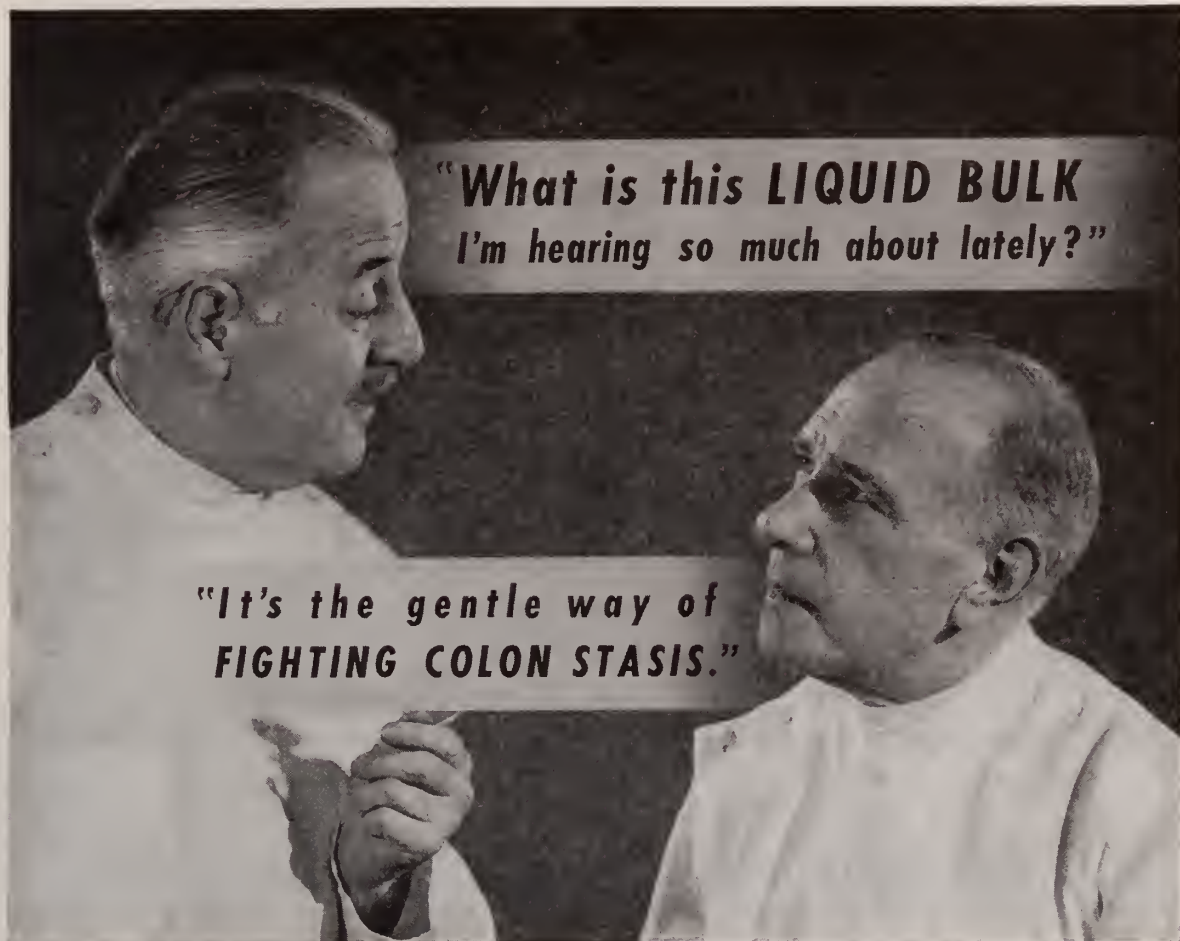
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Your druggist now stocks these two sizes:

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Particularly appropriate in depressive states and other conditions for which a small dosage unit is desired.

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For use in narcolepsy, post-encephalitic parkinsonism, alcoholism and other conditions for which a large dosage unit is required.



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In prescribing Benzedrine Sulfate Tablets, please be sure to specify the tablet-size desired—either 5 mg. or 10 mg.

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Small, easy to take and well tolerated, this modern iron therapy appeals to the physician who desires effective treatment at a reasonable cost to the patient.

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ILLINOIS MEDICAL JOURNAL

THE OFFICIAL ORGAN OF
THE ILLINOIS STATE MEDICAL SOCIETY

VOL. 79

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No. 1

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Editorials

"IF THIS BE TREASON . . ."

Is the American Medical Association a trust? Yes, it is — a sacred "trust." From its very beginning the A.M.A. has considered the health of the American people above all else. It led the fight against diploma mills, and through its efforts medical education was placed on its present high plane. The A.M.A. was instrumental in raising the standards of hospitals so that today American hospitals are the finest in the world. It has striven continuously to give the American people the best quality of medical care that the people of any great nation enjoy. But, because it does not fall in line with all the schemes proposed for the distribution of medical care, the A.M.A. must now be purged.

We say, in the words of Patriek Henry, "If this be treason, make the most of it!"—*Milwaukee Medical Times*.

HAPPY NEW YEAR

A new year is upon us. And so is a new era. The old era is quickly melting into oblivion. The era of reason is being supplanted by the era of might. The era of liberty is evolving with the era of slavery. The era of individualism is being transformed into an era of collectivism. This new era cannot endure. For a time it will exact its toll, wars, slavery, brute force and knavery will predominate. But an enlightened people, having learned that no material progress can be gained from the preachments and encroachments of dictators, will overturn the false leaders who have usurped power.

At the outset of the New Year in a world torn by an ever spreading war, we find ourselves at the beginning of a new era as a result of profound changes wrought by hostilities.

During the New Year we hope to see the overcoming of hatred, banishment of suspicion, rejection of the theory that force creates right, abolition of economic conflict and eradication of world egoism whereby state violate the liberties due their citizens.

In this world of turmoil medical affairs cannot remain stationary. American medicine cannot rest on laurels won or achievements gained. We should realize that there are numerous war problems to be thought of and worked out. We must realize that we are in the presence of a great social and economic upheaval, that nations are being made, unmade and remade. That the medical profession will to a great degree be caught in the sweep of forces beyond its control; that it is potent and responsible for the part it shall play in the new order of things. For all of us it is bound to be a strenuous time of readjustment; it is also an unequal time for surveying the future of medicine and formulating plans for rational development.

American Medicine has always been progressive. There is not a single doctor in the United States who would not willingly alter his method of practice, even unto a sacrifice to himself, were he convinced that political medicine would be for the best interest of the public. Facts from countries having political medicine do not however, prove the point on the subject. Death rates from every cause of death as well as the life expectancy of the American problems, prove graphically that the American way is still the best way.

The established American way of giving medical service should not be discontinued to make way for a new one that has been a failure in European countries and has brought about a lower standard of medical service to the people. Such a shift cannot be called progress. It is simply grasshopper activity. To dignify it with the name of experimentation is an insult to scientific procedure.

Every alert, sincere and practical physician has given many serious hours of study to the problem of preserving the American system of medical care. Practical experience tells us that we must act and act quickly or all of this Nation's established values in medicine and all professions and industries and even the daily comings and goings of its people are apt to be dictatorially and tyrannically regimented.

And the best way to have it a felicitous twelve-month is for every doctor in Illinois to set about making it so through concerted effort that will force the laity to keep its hands off the practice of medicine; stem the tide surging towards socialization of medicine; regain an economic bal-

ance; end the menace of Universities practicing in competition with their own graduates and of all foundations and corporations and institutions practicing medicine and settle once and for all the question of part pay clinics and political jobbery in the control of the medical profession.

"Self help is best help."

We modern men must learn this lesson that built the country; and take to heart the axioms with which our forefathers conquered the wilderness, and survived in spite of the aborigines.

This industrial chaos sweeping the world is no greater a burden than were those that were borne by the early settlers and the heroic Jesuit missionaries that first explored and helped to settle the fertile Mississippi Valley for the King of France. "What man has done man may do." Are we grown so chicken hearted that we shall throw up the sponge and deliver ourselves up to socialization, state medicine and the sovietization of this our native land.

What travesty to the memory of those pioneer doctors who knew none of our modern aids to therapy or surgery! What travesty to manhood generally!

Let us rather adopt that firm resolve of the World War that stemmed the invaders in an almost irresistible rush—

"THEY SHALL NOT PASS!"

The birthright of generations yet to come lies in our keeping. We dare not be false to the trust, either to posterity or to the mother science. No one will do this work for us but ourselves. We must tend our own bivouac.

And in the doing, as in the doing of all duty, as in the daily sacrifice of every practicing physician's life, will come a reward greater to the doctors, and will accrue a finer salvation for the world of men than can be bought by all the millions and all the commissions of all the self aggregated dictators and misguided millionaire philanthropists that even a most prosperous America might breed.

Yet it must be admitted that out of all the grief and catastrophe and irrevocable woe left in the wake of the year 1940 it was not devoid of a few gifts for mankind. Nothing in all this mundane sphere is so evil as not to learn at least the lesson of terrible example. Out of the chaos and confusion of 1940 has come to the medical profession a reawakened consciousness of the duties of the members of the profession to the

mother science, to themselves and to the general public, as well as to our native land, honey-combed as it is by socialistic theorists, and a self-exploiting band of lay philanthropists. But if the year 1940 proved only too bitterly the "winter of our discontent" we can at least pause and remember "If winter comes, can spring be far behind?"

And so, both for men and medicine the year 1941 we hope holds promise of happiness, prosperity and patriotism regained.

ILLINOIS STATE MEDICAL SOCIETY

Creation of three decades of struggle.

The story of the attempt to organize in Illinois a medical society which should regulate the practice of medicine and subdue quackery begins in the early days of the nineteenth century. Possible significance for the profession of 1941 may justify its retelling.

State legislation was the instrument which set up the first medical districts in Illinois. Here Dr. John Todd obtained his initial experience in medical organization, culminating two decades later, after the state-controlled experiments failed, in Todd's fathering of the State Medical Society formed in Springfield in 1840. This group, working as private individuals, accomplished what previous legislation had failed to do — it aroused the interest of the profession to a point which made possible a really statewide representation at the Convention of 1850.

The dual struggle to organize the medical profession of the state and procure legislation in its behalf, in which victory was not achieved until the second half of the century, began in 1817.

At Vincennes, Illinois Territory, a few energetic members of the profession, among whom may have been Doctors Laffont, Tisdale and Scull, besides the army surgeons Elliot and McKee, were said to have formed a society in 1817, which was recorded to have held its last meeting in 1819.

The Medical Practice Law "for the purpose of regulating the practice of physics and surgery" appeared in the Laws of the Illinois Territory of 1817-18. Under the provisions of this act, the third principal meridian was the dividing line for the two medical districts ordered formed.

At Carmi, in the eastern district, were to meet Doctors J. D. Wolverton, J. E. Throgmorton, Thomas Shannon, Henry Oldham, James Wil-

son, John Reid, Amos Chipp, Samuel R. Campbell and Harden M. Weatherford.

Doctors Joseph Bowers, John Todd, Hancock, Cairns, George Fisher, William L. Reynolds, Heath, George Cadwell and Paine of Kaskaskia were to meet in this city in May, 1818, to form the western section. Ten dollars was to be the fee for examining students and giving diplomas.

Apparently this law was ineffective or not carried out at all, since less than four months after Illinois attained her statehood, the Legislature enacted an Act for the Establishment of Medical Societies, dated March 24, 1819 and signed by the state's first governor, Shadrach Bond. This Act placed the burden of responsibility for regulating practice upon the medical profession itself.

A new division provided for four medical districts where a board of physicians was to gather on the second Monday of the following May and incorporate. Belleville, Brownsville, Shawneetown and Palmyra were the meeting places designated.

The members were to elect officers, appoint a committee of five to examine students, grant diplomas (for which a fee of ten dollars was to be charged) and disqualify physicians from collecting debts if they had not obeyed the Act's provisions.

Each physician was to keep an accurate account of all births, deaths and diseases for transmission to the president of the society, whose duty it was to publish a record in one or more newspapers of the state. The punishment for failure or refusal was the imposition of a \$10 fine. Absence without cause from the May meeting cost the culprit another \$5.

Section II of the Act provided for examination of bills considered exorbitant by the patient.

The aforementioned measure, championed in the Legislature by Dr. George Cadwell, was repealed in 1821. In February, 1823 "An Act Regulating Physicians" passed the Senate, but ultimately failed. In 1824 the matter of again organizing the medical profession under state control came before the Legislature.

Finally on January 15, 1825, Mr. Nicholas Hansen introduced an "Act Prescribing the Mode of Licensing Physicians," which was passed by the General Assembly. It created five districts with a board of censors in each which

should have power to grant licenses. Carrollton, Belleville, Golconda, Albion and Mt. Vernon were named the centers of the five districts respectively.

The bitter antagonism throughout the state toward the medical profession caused the next Legislature to repeal the Act of 1825. It likewise manifested itself by the passage on January 3, 1825 of an "Act to Prevent the Disinterment of the Dead" to hinder physicians and surgeons from using cadavers for dissection purposes. One must conclude that "body-snatching," a recurring cause of controversy between doctors and citizens after the founding of the several Illinois medical colleges in the 1840's, was prevalent in the state at a very early date.

For eight years continuous efforts had been put forth to reform the medical situation, which was sufficiently unsatisfactory as to have aroused popular protest, reflected by frequent references in the press to the "deplorable conditions of quackery."

In spite of genuine efforts to carry out at least the Law of 1819, the net results as regards medical organization were exactly nil. However, there is adequate proof that two districts set up under this Act attempted to carry out its provisions.

The Edwardsville *Spectator* of April 25, 1820 carried the following notice, "The first district medical society of the state of Illinois will convene in Edwardsville on the second Monday of May next," signed by John Todd, president. Apparently interest lagged, for on October 10 the *Spectator* contained a more urgent notice to the effect that "the society composed of the first medical district will meet at Edwardsville the second Monday of November next at 10 o'clock, a.m., agreeable to previous adjournment. It is hoped that the importance of this meeting being well known will be sufficient inducement to cause a punctual attendance of the members —," signed by Dr. Todd's partner, Dr. Samuel G. J. De Camp. Repeated on October 17, 24 and 31, 1820 is the identical notice.

Announcement of the "Annual Meeting of the First District Society of the State of Illinois at Edwardsville," signed by Henry Perrine, Secretary, and requesting punctual attendance, appeared in April, 1821.

Perhaps the chief interest for the historian lies in the fact that Dr. John Todd's activity as

a medical organizer appears early in the annals of the state. His was a life-long conviction in the necessity for group cooperation to protect professional interests. Twenty years later we find his name occurring again as president of the State Medical Society.

The second medical district was likewise active as evidenced by a report, printed May 29, 1820, to Dr. William L. Reynolds of the Kaskaskia Medical Society from Dr. Hugh Steel of Brownsville, describing health conditions in Jackson County.

In spite of the crying need for reform in a state where an apprenticeship of a year or two with a country practitioner or in the shop of an ignorant apothecary, or at most a superficial course of study at some medical college, qualified a man to become a doctor, another decade passed before the next recorded attempt to form a medical society. This was occasioned by the arrival in Chicago of Dr. Levi Boone, grandnephew of the storied Daniel, who migrated from Hillsboro, Illinois in the spring of 1836.

Most significant is the fact that after obtaining his M.D. from Transylvania, Dr. Boone located at Edwardsville, possibly in the late 1820's, where he must have known and been inspired by Dr. John Todd.

As a direct result of the newcomer's efforts to awaken Chicago physicians to dangers of the lack of organization, the first Cook County Medical Society was born. The state census of 1835 listed 14 physicians in Chicago, so that the addition of Dr. Boone, and possibly one or two other members of the medical confraternity, made a sufficiently large group from which to create an active society in 1836.

At that date, Chicago boasted two newspapers, the *American*, a semi-weekly, and the *Democrat*, a weekly, the latter edited for a time by Dr. Daniel Brainard, the energetic founder of Rush Medical College. The October first issue of both papers contained a notice to the press, under the title "Improvement of Medical Science," of the purpose and aims of the Society, given by Dr. Boone as Secretary, and announcing a meeting for "Monday evening next." Andreas, in his *History of Chicago, Illinois*, records that this meeting took place in the office of the Chicago Marine and Fire Insurance Company, of which Dr. Boone was also secretary.

This group, too, soon dissolved, it seems, for no further record of its activities remain. The two contributing factors were doubtless the financial panic of 1837 and the drouth of the same year, which caused residents of Chicago to put themselves on short rations and disease to carry off many of the inhabitants. Genuine suffering prevailed among all classes, probably dwarfing the importance of medical organization at this time.

There came into being in 1840 at Springfield the State Medical Society under the presidency of Dr. John Todd. Its existence is attested by the call, published in the *Illinois State Journal* of Friday, June 19, 1840, and a membership certificate issued to Dr. Thomas W. Hennessey of La Salle, under the date of February 27, 1841.

Whether or not the State Medical Society felt the need of Legislative support for its program we do not know; but at any rate, in spite of previous discouragements along this line, in 1842 there was brought before the General Assembly "An Act to Incorporate the Illinois State Medical Society" and regulate the practice of medicine, which Act was tabled.

The Convention of 1850, which resulted in the formation of the Illinois State Medical Society, was the culmination of a new series of attempts at medical organization, beginning in 1846.

The founding of Rush Medical College in 1843, the appearance of the *Illinois Medical Journal* in 1844, the adoption of a National Code of Medical Ethics by the recently established National Medical Association, the enthusiasm of Drs. N. S. Davis, Brainard and others imbued with their spirit — all gave impetus to the movement which resulted in four new local groups exerting an especial influence toward State organization. The Rock River Valley Medical Society, dating from 1846, the Lawrenceville Aesculapian Medical Society, incorporated in 1847, the Peoria District Medical Society, founded in 1848, and the Ottawa Medico-Chirurgical Society of 1849 comprised the list of new societies.

An article on "State Legislation Respecting Medical Practice," published in the *Illinois Medical and Surgical Journal* for October, 1844 states: "If it should be thought desirable to have medical societies incorporated, we have no objection to this course, as it has reference to the profession and its improvement."

If there were organized medical societies from which such persons (quacks) were excluded, it would act as a powerful check on their pretensions."

While apparently the article took no cognizance of the State Medical Society then functioning in Springfield, we must remember that it drew its membership from the central and southern sections only of the state, due largely to inconveniences of travel in those days. Naturally the growing group of practitioners in Chicago were eager for an organization more state-wide in character.

The first of the new groups to be formed was the Rock River Valley Medical Society, which met at Rockford on February 17, 1846 and elected Dr. J. C. Goodhue president. Its field was northern Illinois and the southern portion of the Wisconsin Territory.

One noteworthy event of its second meeting, held on the 19th of the following May, was the presence of Dr. Daniel Brainard, who had traveled from Chicago by private conveyance for the purpose of becoming a member of the Society, Chicago at that date having no group of its own. Among its members who later acquired distinction were Drs. Ames, Catlin, The Clarks, Everett, Ephraim Ingals, Martin, Paddock, Ransom and Welch.

Far to the southeast, four energetic men, David Adams, J. M. Doyle, Elisha Banks and Charles Hamilton, got together in the town of Lawrenceville sometime during 1846 and founded one of the strongest local medical organizations of the state. On February 17, 1847 it became a regularly chartered institution, incorporated as the "Lawrenceville Aesculapian Medical Society." Later on, due to the fact that members from other counties began to meet with the original founders, the society changed its name to the "Aesculapian Society of the Wabash Valley" (1893).

In the early days, attendance at its meetings required the busy physician to sacrifice nearly a week of his valuable time, for its sessions extended through Wednesday and Thursday, and one full day was required to go and return. Its purpose is clearly stated in the *Transactions* of the Illinois State Medical Society¹: "This So-

1. *Transactions of the Illinois State Medical Society*, Transaction 45, p. 54.

ciety shall be auxiliary to the Illinois State Medical Society and the American Medical Association, and shall conform to the code adopted by the latter."

Improved means of travel resulting from the construction of three railroads, the Alton and Terre Haute (now the Big Four), the Ohio and Mississippi (Baltimore and Ohio) and the Illinois Central, had much to do in bringing about the prosperity that the Aesculapian Society enjoyed throughout the greater part of the decade of the 50's.

Dark days followed. During the Civil War but two meetings were held, and as an aftermath "irregular" practitioners abounded. Member after member was expelled for quackery; special meetings were even called devoted wholly to the discussion of ethics. Early in the 70's the Society again entered upon a "career of prosperity and honor."

The Aesculapian Society furnished four presidents to the Illinois State Medical Society before the end of the century, Doctors William Chambers, 1860, James Steele, 1865, G. W. Albin, 1871, and J. D. Washburn, 1876. It was twice represented on the State Board of Health, first by Dr. Chambers in 1877, and twenty years later by Dr. Charles B. Johnson.

The progressive spirit of the early Society is shown by the fact that in 1856 it appointed a committee to go before the Legislature and recommended the creation of a State Board of Health for the regulation of the practice of medicine and the registration of births and deaths. In 1861 it appointed a second committee. Both efforts were fruitless. In 1876, when a committee of five was appointed for the same purpose by the Illinois State Medical Society, two members were from the Aesculapian Society.

The third society of import was the Peoria District Medical Society, founded in that city on April 19, 1848, embracing Peoria, Fulton, Stark, Tazewell, Woodford and other counties. It supplied a number of the names appearing on the membership roll of the Illinois State Medical Society, among them Doctors Rudolphus Rouse, Francis A. McNeill, Elias S. Cooper and Robert Boal. A. G. Henry, who had formerly resided in Peoria, had also contributed to the work of this society.

The fourth and last society occupies a peculiar

position in regard to the State Convention of 1850. It was instrumental in starting the Illinois State Medical Society on its path, but supplied not one member to the Convention. This was the Ottawa Medico-Chirurgical Society, organized on January 1, 1849, whose president was Dr. Allen Howland. It was the successor to a short-lived group calling itself the Medical Society of La Salle and Adjoining Counties, instituted in 1847.

One of the first projects undertaken by the new society was the launching of a convention to be held in Springfield on the first day of January, 1850. The September, 1849 issue of the *Northwestern Medical and Surgical Journal* carried an editorial comment apologizing for its failure to call attention to the circular announcing the convention and added: "We are happy to express our approval of, and cooperation in this project; but we doubt the propriety of the time appointed. The close of navigation at that time will have the effect of procuring but a meagre attendance. As the matter has been so long deferred, we would suggest that the convention be postponed until May, at which time we suppose a tolerably full attendance might be procured."²

The immediate results of the early notice were to distinctly discredit the efforts of the Ottawa Society. This notice had been sent not only to prominent doctors and to medical societies and publications, but to the secular press as well. The notification proved to be a veritable explosive. It is reported to have been the means of exciting ridicule at the hands of the newspapers, whose caustic criticisms resulted in the appointment of a committee to prepare resolutions disavowing the officiousness of the secretary. The report of the committee was a severe rebuke to the author, whose wordy effort they characterized as "bombastic literary nonsense."

In spite of the Secretary's wounded pride and the creation of much local ill-feeling, the Society received a number of encouraging replies expressing the necessity for a State Society. As a consequence a new call was drawn up for a convention to be held in Springfield on June 4, 1850 and duly sent to the *Northwestern Medical and Surgical Journal* for publication. When the Convention finally convened, it represented

2. *Northwestern Medical and Surgical Journal* 6:295.

the realized hopes of the early physicians of Illinois.

March of 1850 saw the birth of the Chicago Medical Society, which met on April 5 and elected Dr. Levi Boone president. The same year saw the birth of the Fox River Valley Society.

Certainly the struggle for a permanent medical society in Illinois, which should have statewide representation, placed the names of Dr. John Todd and Dr. Levi Boone beside those of such men as Daniel Brainard and N. S. Davis in zeal for the welfare of their profession.

ILLINOIS STATE MEDICAL SOCIETY COMMITTEE ON MEDICAL BENEVOLENCE

The House of Delegates of the Illinois State Medical Society at its Annual Meeting held May 21-22-23, 1940, voted that certain changes be made in the Constitution and By-Laws to enable the Society to establish a Benevolent Fund for indigent physicians and their widows.

The plan adopted very closely resembles the one which has been operating in Pennsylvania for the past thirty-seven years.

We are publishing herewith the personnel of the Committee together with an outline of the purposes and the power given the Committee to carry on this work.

Committee on Medical Benevolence, John S. Nagel, Chairman 185 N. Wabash, Chicago, Ill. Charles H. Hulick, Shelbyville; Clarence H. Boswell, Rockford.

PURPOSES OF THE COMMITTEE

1. To create a Benevolence Fund:
 - a. Through allocation of \$1.00 each year from dues of each member.
 - b. Through gratuities, endowments, etc.
 - c. Through the efforts of the Women's Auxiliary to the Illinois State Medical Society.
2. To investigate cases of alleged financial difficulties on the part of members, their widows or widowers.
3. When found worthy, to appropriate regular monthly benefits not to exceed \$25.00 to \$30.00 per month in any one case. When deemed advisable, may appropriate more over a short period of time when rehabilitation seems probable.

4. To designate the component society secretary in each county as the county chairman to submit applications from members for benefits, then to see that a questionnaire form is properly executed to give the desired information relative to the case. The Councilor of the District may assist the Committee in submitting names of members, their widows or widowers, when he believes the individual is entitled to the benefits herein prescribed.

5. When it is the opinion of the Committee that the case is a worthy one and benefits should be allowed, the Chairman of the Committee should notify the Secretary of the State Medical Society, stating the amount agreed upon as the regular allowance, stating the intervals at which the benefits shall be paid, so that proper vouchers may be submitted.

THE INVESTIGATIONS

When it is reported to the Committee that a member, widow or widower of a member is needy and unable to secure the necessities of life, a questionnaire form shall be submitted from the Secretary's office asking for the following information:

1. A brief social history of the applicant, past and present. Data concerning reasons for being in want whenever possible, and all other pertinent information which will enable the Committee to take the proper action.
2. A brief financial history including present assets and income, sources and amount.
3. Disbursing of present resources (rent, food, clothing, etc.).
4. Statements as to probable permanency of the present distress.
5. Any possible sources of assistance such as:
 - a. Relatives
 - b. Friends
 - c. Fraternal Organizations
 - d. Insurance
 - e. Pensions
6. Have all sources of help been solicited?
7. Additional information. Means by which influence might be exerted to find employment or some other source of income. Is there a possibility of rehabilitation? (With moderate financial assistance over a short period of time, would it be possible for the applicant to become self-supporting?)

PROCEDURE

Requests from members, their widows or widowers for assistance, if submitted to the Secretary, shall be referred to the Committee promptly. At the same time a questionnaire form will be submitted to the applicant or to the county society secretary, or to the Councilor if the information is submitted by him. All possible information which will aid the Committee in determining the eligibility for assistance, the amount actually needed, or if rehabilitation through short time payments is probable, should be submitted promptly.

Each case will receive the proper consideration by the entire committee which shall pass final judgment on:

1. Eligibility for aid.
2. The amount of aid.
3. Whether for a short time or permanently.

The decision of the Committee shall be final and there will be no higher authority within the Society to whom appeals from decisions of the Committee can be referred.

In the event that additional income is received and the individual is no longer eligible for further benefits, the county society secretary or the Councilor submitted the data, should notify the Committee of these facts promptly.

As soon as a reasonable amount is accumulated in the Benevolence Fund, only the income from the Fund shall be used to pay benefits.

The Medical Benevolence Fund shall be subject to an annual audit as are other funds of the Illinois State Medical Society, although merely the amount of the Fund, the payments made during the year, the additions to the Fund, and the interest from investments shall be mentioned. The names of beneficiaries shall not appear in the annual audit, nor shall they be mentioned in the annual report of the Committee to the House of Delegates.

The Secretary of the State Medical Society shall maintain a separate file for all correspondence relative to beneficiaries, amounts paid, investigations and minutes of meetings of the Committee, which shall be a closed file and not open to inspection by others than members of the Committee, the Auditor, or a regularly designated Committee of the House of Delegates.

As the regular vouchers of the Illinois State Medical Society are paid through the State Bank

and Trust Company of Evanston, all funds for benevolence purposes shall be maintained in another bank and payments for benevolence purposes shall constitute the only vouchers drawn on these funds. The council of the Illinois State Medical Society has allocated the sum of \$5,000.00 maintained in the National Bank of Monmouth for several years as a Certificate of Deposit, as the nucleus for the Benevolence Fund, and payments shall be made from this fund on this bank.

NOTE: The above report and procedure was presented to the Council of the Illinois State Medical Society in regular session on August 4, 1940, by the Chairman of the Committee on Medical Benevolence. The report and procedure were approved, and the Committee instructed to make the necessary arrangements to function immediately. The Council was authorized by the House of Delegates at the 1940 annual meeting to approve a method of procedure so that the work could be started with a minimum amount of delay.

WOMAN'S AUXILIARY THE BENEVOLENT FUND

The House of Delegates of the Illinois State Medical Society at its Annual Meeting held May 23, 1940, voted that certain changes be made in the Constitution and By-Laws to enable the Society to establish a Benevolent Fund for indigent physicians and their widows.

The Illinois State Medical Society has requested the Auxiliary to assist in this great work.

It is not necessary to remind the Auxiliary members the advantages accruing from such a plan.

As President of the Auxiliary, I welcome the opportunity to make this crusade for benevolence a major objective. I trust that it will prove a stimulus for increased membership in the Auxiliary.

At present there are in the State of Illinois 1000 Auxiliary members in 22 organized counties. This represents only 20% of the doctors in the Medical Society. It is my earnest hope that the physicians will cooperate with the Auxiliary to the end, that more Auxiliaries may be organized and a larger membership assured.

Illinois is following the Pennsylvania plan,

where last year over \$4000.00 was raised for this fund.

To date 8 counties have pledged aid to the Benevolent Fund. Card parties, bake sales, teas, dances, assessment of \$1.00 from each member, are some of the means used by the Auxiliaries to raise money.

As physicians' wives we will wholeheartedly support this project, realizing that in the final analysis it is the physician's wife who will benefit from this benevolence.

In conclusion, Auxiliary members, I appeal to you to accept the challenge of the Illinois State Medical Society. They solicit our assistance. Do not let us fail them.

Mrs. Harry Dooley, President

To the Woman's Auxiliary to the Chicago Medical Society. Does it mean anything to you that the first and second recipient of aid from our Benevolence Fund were doctor's widows?

Dr. J. S. Nagel, Chairman.

CANCER IS SECOND IN THE LIST OF CAUSES OF DEATH

An article, "What You Should Know About Cancer," appeared in *The Health Officer*, September, 1939. The medical profession in their campaign of education should pass the information to the lay public. We abstract and quote as follows:

"Twenty-five years ago it stood seventh in the list of causes of death," says the article. "Now it is second, claiming over 140,000 lives annually—more than twice as many deaths as are attributed each year to tuberculosis. Only heart disease kills more people."

Principally a disease of adult life, it occurs most often between the ages of forty and seventy. Although it may affect any part of the body, it occurs more frequently in the female breast and genital organs; thus women are afflicted by cancer more often than men.

"Many absurd ideas regarding the relationship of diet to cancer are prevalent," the article advises. "Neither a high protein diet, a vegetarian diet, the ingestion of alcohol, nor over-indulgence in any type of food have any demonstrable effect upon the incidence of cancer. On the other hand, clinical evidence suggests that poor teeth, or lack of teeth, the ingestion of hot food and drink, irregularity of meals, and gastro-intestinal diseases may be of some importance in the causation of stomach cancer."

Particular food substances, methods of food preparation and the use of certain cooking utensils—aluminum ware, for example—have no known influence upon the causation, prevention, or cure of the disease.

Cancer is not contagious, nor is the influence of heredity determined; but its exciting causes are known to be many. Chemical irritations, for example, exposure to heat, light, X-rays, or radium over prolonged

periods of time, may start the abnormal growth of cells known as a cancer.

"Despite many claims," warns the article, "no reliable skin or blood test has been developed for the diagnosis of cancer. Much experimental work is being done, however, and it is hoped that a dependable test will in time be worked out. Physicians now depend for a diagnosis upon the microscopic examination, by a competent pathologist, of a small piece of the suspected new growth."

Under the heading "Danger Signals," the article lists certain symptoms which point to the possibility of cancer and these should lead immediately to a visit to a physician. These "signals" are:

1. Any persistent lump or thickening, especially of the breast.
2. Any irregular bleeding or discharge from any of the body openings.
3. Any sore that does not heal, particularly about the tongue, mouth, or lips.
4. Persistent indigestion, especially when accompanied by distaste for meat.
5. Sudden changes in the form or rate of growth of a mole or wart.
6. Pain is usually a late symptom—do not wait for it.

There are over 5,000 quack "cures" for cancer on record, according to the article, which further warns against the "sure fire" treatments advertised to cure all types of cancer by methods which are kept secret. The modern treatment of cancer employs surgery, X-rays, or radium, or a combination of these methods. No other instrumentalities are recommended.

Fear and ignorance of the nature of cancer prevent many persons from securing early treatment. It has been estimated that 25,000 deaths from cancer could be prevented each year if people were fully informed and took advantage of existing knowledge of the disease.

"So far as possible one should avoid prolonged irritation to any part. Protection from over-exposure to the sun and wind, prompt repair of all birth injuries to the womb, permitting the breast to function normally, repair of jagged teeth, avoidance of ill-fitting dental plates, self-control in using tobacco, correction of chronic constipation—in short, elimination of unnecessary abuse of any tissue is a common sense method of helping to guard against cancer.

The Smiths were on the balcony and can hear what a young couple are saying in the garden below.

Mrs. Smith: "I think he wants to propose. We ought not to listen. Whistle to him."

Mr. Smith: "Why should I? Nobody whistled to warn me."

Were all men built to a stock pattern so that they responded to physical agents or bacterial infections in regular fashion according to their peculiar constitution, the practice of medicine would be a simple business. . . . All men, however, are like contrary women of whom the comedian sang: "You never see two alike any one time and you never see one alike twice."—*M. J. Australia*.

MEDICAL ECONOMICS

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The end of a calendar year and the beginning of a new one is a good occasion to have a critical look at the accomplishments of the past year and try to prepare for what the coming year will produce. During 1940, the medical profession made a most creditable showing. They continued their program of educating the public of the danger inherent in State Medicine and at the same time opposed any definite action in Congress on that subject. Of course, the importance of world-wide problems helped to keep the reformers occupied in other more important fields, but at least we have the satisfaction of knowing that no progress was made in the socialization of the practice of medicine. However, the impending trial, of the officers of the American Medical Association for violation of the Anti-trust act is still on the calendar of unfinished business, and hovers over the peace of mind of the medical profession. It is to be hoped that a definite decision will be arrived at during the coming year. The medical profession has offered and delivered when requested all possible assistance in the Defense Program. At all times since the annual meeting in New York, when the request for cooperation was made and the promise that it would be given was made by the House of Delegates, the organized medical profession of the nation has done everything requested and we feel that this spirit of cooperation will continue in the conscription of men as well as in their care after they are inducted into the armed forces of the nation, even though it means a large number of physicians will be obliged to leave their private practice for less remunerative positions in either the Army or Navy. The younger men in the profession, as well as some of the older men have evidenced their willingness to cooperate by enlistment in the Reserves Officers Corps.

We must not feel that all dangers of legislation affecting the medical profession is past. In the December 7, 1940 issue of *Congressional*

Intelligence, Washington's Oldest Factual Service, the statement was made that the Health Program would again come before Congress in 1941, based probably on the large number of rejections for Army Service. This will be offered as concrete proof that the health of the nation is bad, in spite of the statistical proof that we are the healthiest nation in the world today and are definitely in better health than we were ten years ago. Under the label of aiding in defense, any such program would be almost certain of Congressional approval. Such a statement from so good a source should make us resolve to continue the campaign of opposition to any socialization of the practice of medicine. The *Victor News* for December 1940, contains an article in regard to Rural Health in which Dr. R. C. Williams, chief medical officer for the Farm Security Administration, is quoted as saying "The health of our rural population is inseparable from the health of our defense forces. Rural areas regularly contribute more recruits in proportion to their population than cities and large towns. Although Americans are supposedly healthier than ever, Army Medical officers are finding nearly one out of every three volunteers unfit for military service because of physical defects or impaired health." So you can see that already the propaganda mill is in operation even before the examination of conscripts is really begun. Of course, we can expect more of the same.

The success or failure of Group Hospitalization is now being analyzed. There can be no doubt that it takes care of one of the largest costs of illness, particularly the catastrophic kinds, which strike suddenly. Whether or not it is actually sound is still controversial. Some of the groups operating the plans have been obliged to raise the annual cost and few of them have been tested by an epidemic or a catastrophe, which makes an abnormally great demand for hospital care. Until that time arrives the an-

swer must be held in obedience. Another danger, long suspected, is coming into the open and that is the selling of medical service along with hospitalization by the hospital. This may well become a serious question and one that may lead to great difference of opinion and even trouble within the medical profession. As practicing physicians and members of the staff of hospitals we must consider this problem before the real attempt is made to include it in any such plan. We must be ready to tell the hospitals in which we work just how we feel on the matter and must give good and sufficient reason for our stand.

The sickness insurance plan of Greendale, Wisconsin, has been abandoned, according to recent information, because it had proved a financial failure. Physicians have received less than one half of their fees, and administrative costs have not been covered. The number of subscribers had dropped to 155, and although 450 doctors were cooperating, and at the cost \$24.00 per year there was no demand for such service. Incidentally it might be mentioned that the State Medical Society of Wisconsin has severed all connections with the local Associated Hospital Service, because they have been including medical service in group hospitalization contracts. It is quite apparent from the above that there is still much testing to be done before the solution of some of the problems of delivering so-called adequate medical care can be arrived at. Certainly much more time and study are necessary than has been given up to this time. And this study should be given by that group of men, best able to evaluate all the factors entering into the delivery of that service to those in need of it, the medical profession.

The President of the Illinois State Medical Society, has prepared an article on Medical Service to the Rural Population, and has kindly presented it to this Committee for publication. Every member of the Illinois State Medical Society should read any article by its president, and particularly when written on a subject with which he is so conversant. Also it affects at least one half of the physicians of the state.

The National Conference on Medical Service, formerly the Northwest Regional Conference, will be held Sunday Feb. 16, 1941 at the Palmer House. Every physician interested in the economic problems of medicine should attend.

The Committee on Medical Economics wishes every reader of this column, A HAPPY NEW YEAR.

E. S. Hamilton, Chairman

MEDICAL SERVICE TO THE RURAL POPULATION

Modern Medicine comes from Greek medicine. The Greeks assimilated all that previous civilizations had to offer and took the best from existing civilizations.

As medicine of the early Greeks became organized it was in the hands of the priests of Aesculapius whose temples of healing were located about the countryside. So great as the Greeks believed was the power of Aesculapius over disease, so wonderful were the cures which he accomplished, and so noble and fine his character that they not only made him a god, but erected temples in his honor. These temples were not places of barren worship, but were sanatoria prototypes of our hospitals and schools of medicine.

The means chiefly employed for the restoration of health were sunlight, fresh air, pure water, exercise and diet. Instructions in medicine was oral, since there were no written medical books.

With the lapse of time the religious features of the temple fell away to give place to more and more radical medical treatment. The greatest of these early physicians was Hippocrates who was born on the Island of Kos in 460 Before Christ.

For nobleness of professional character he has been the model of countless generations of physicians. A quotation from the oath he required young men to take before entering practice is as follows: "Into whatsoever house I shall enter I will go for the benefit of the sick, holding aloof from all voluntary wrong and corruption, including the seduction of males and females of freeman and slaves. Whatsoever in my practice or not in my practice I shall see or hear amid the lives of men I will not divulge, as reckoning that all such things should be kept secret."

Greek medicine survived for three hundred years but after the fall of Corinth, Greek medicine was carried to Rome. In time the Roman empire fell and its medical knowledge and practice was carried away by the Barbarians.

Until this time the world had been largely rural. Flocks and herds had been the chief dependence of populated districts for food. As cities formed the populace became filthy and were attacked by epidemics, so called scourges. Even doctors had little ideas of cleanliness or sanitation. Disease became so common that whole cities were devastated. For several hundred years the population found it difficult to hold its own against the savages of disease and but for the rural inhabitation whole nations would have been swept away by sickness.

In the seventeenth Century, some advancement was made in medicine. The writings of Hippocrates were first translated. Harvey discovered the circulation of the blood. In the eighteenth century, Jenner, in a rural home, discovered vaccination for the prevention of smallpox, a boon to those who live in rural districts as well as those in the cities. Dr. Jenner did not live to realize the greatness of his discovery. That from this idea of vaccination would be developed a system of vaccination to save countless millions of lives. Diphtheria vaccine has conquered Diphtheria and typhoid vaccine, typhoid, until recently two of the most common causes of death. Smallpox is seldom heard of and when it does occur is in a very mild form because of vaccination of generation after generation. In the sixteenth century the Spaniards brought this disease from Europe to Mexico and American Indians became infested. It caused the death of half of them in the next four years. Even the Colonists, though at that time practically all ruralists, suffered terribly from the disease until vaccination became of universal use.

In 1846, anesthesia was discovered and, though there has been much objection to its use, it has become one of the most useful to mankind of all discoveries. Our rural populations have as much benefit from its use as any other group of citizens. In 1847, Semmelweis demonstrated the contagious nature of puerperal fever. In 1867, Lister discovered that antiseptics could be useful in obstetrics and surgery, revolutionizing surgery and saving countless lives of mothers in childbirth.

Our rural population has the same advantage derived from these as their city cousins. Pasteur, a French chemist, further developed the work of Jenner, Semmelweis and Lister and

revolutionized all of medicine. No class of citizens of these United States are denied the benefits of the discoveries of these great men whose names will never fade or be stricken from the pages of Medical History.

Let us consider the benefits of these great discoveries of principles now in use for the health and happiness of humanity in our America.

The effect is more pronounced in the saving of the lives of children. It is true the span of life has been doubled but comparatively little has been done to stay disease of the aged. The older are made more comfortable and have not been forgotten.

Only in the last half century have we learned to utilize and appreciate the discoveries of Jenner, Semmelweis, Lister and Pasteur and a few figures will show that organized medicine has developed ways and methods to save humanity from some of the results and death from horrible diseases that previously baffled the minds of our most capable and worthy physicians.

Please note carefully that in 1913, just a little more than a quarter of a century ago, scarlet fever, diphtheria, measles, whooping cough, and typhoid fever in one years time in the State of Illinois caused the death of 4,148 persons, we might say children but a few were adults.

Twenty-six years later, during the year 1939, the same diseases were the cause of but 451 deaths as taken from the records of our state. We are accused of neglecting our citizens unable to pay. Does it seem true with these facts before us?

We are also accused of not giving the ruralist proper medical care. What are the facts? From the *Illinois Health Messenger*, August 1938, last year in Illinois there were 33,953 births in communities of less than ten thousand people and in the strictly rural areas. Among these, most of whom were not born in hospitals, the loss of life was at the rate of 46.8 per 1,000 births. In the cities of ten thousand or more, exclusive of Chicago there were 31,697 births and the rate of loss was 46.6 per one thousand, only a slight difference and the urban babies were mostly born in hospitals while the rural babies were born in the home. On the other hand, mothers fared best in the rural areas. Deaths of mothers from puerperal causes in rural districts were at the rate of 2.7 per thousand live births against 4.2

in all municipalities. Statistics show that improvement in infant and maternal mortality had been much more rapid in recent years in the rural than in urban localities. The facts just stated prove beyond question that rural communities are not neglected and if any appreciable number of our citizens of any class were not receiving proper medical care the improvement of health conditions employed by our people could not be attained. The medical profession hopes to do better, not only this annual meeting where by far the majority of us care for the sick in rural communities but the Illinois State Medical Society last year held four Post Graduate Meetings in different parts of the state outside of Chicago that were attended by over six hundred. This year we have already held four and expect to have six more, one of which will be held at Carbondale for Southern Illinois doctors.

Lectures in these meetings are given largely by men from our best Universities and a real Post Graduate course given for you who practice among the country folks and cannot leave your post for a longer course.

Within the memory of many of us we had the opportunity of attending but two medical meetings a year, we did well to attend the Southern Illinois meeting and it was a great treat to get a day off to attend the Illinois State meeting. If a man wanted to attend a real Post Graduate course, he was supposed to go to Vienna or Edinburgh. Something but few did. Doctor, we are bringing better Post Graduate work to your very door. Our County meetings, our Southern Illinois meetings, and the Post Graduate work furnished by the State Society are all excellent. Citizens of all brackets, rich, poor, middle class, urban or rural, are all benefitted by the advances of medicine. They are and will be favored to the same degree you educate yourselves. Let us not fail any of them under our care.

Correspondence

THE OLD-FASHIONED DOCTOR

Chicago, Ill.

December 6, 1940

To the Editor:

To the generations that are past the doctor was a man apart. When he passed, the children gazed with awe, respect and a tinge of fear. He

knew many things not known to other men, things of which he never spoke. He drove the lonely roads at night when his soul new glories learned.

At the great event, the advent into life, he was there to give safe conduct to the crying, helpless, little babe. And when the eternal journey was begun he was there; his presence soothed the grief of those who in spirit waved farewell. When we were ill, he calmed our fears with manner and with words and eased our pains with magic drugs.

Men told him things they dared not tell their wives. Women, confessions made, that would have set the town aflame. The prescriptions were wise counsel and sound advice, for which he nothing charged. He knew not Freud or James, but he read the minds of men.

The doctor never seemed concerned about God or the hereafter. He was not afraid; in the midst of danger he was calm. He believed that the God who rules the universe must have contempt for fear.

Emmet Keating, M.D.

VACANCIES ON MEDICAL STAFFS OF STATE HOSPITALS

Springfield, Ill., Dec. 2, 1940

To the Editor:

At the present time, there are many vacancies on the medical staffs of the State hospitals for the insane and feeble-minded under the jurisdiction of the State Department of Public Welfare.

Physicians enter the service in the classification of junior physician. Legal residence in the State of Illinois, citizenship in the United States, graduation from a Class A medical college, as defined by the American Medical Association, a maximum age less than 45 years and license to practice medicine in this State are required.

The salary for this position is \$150 per month with full maintenance for self and family. At the end of each year of service, an automatic increase of \$5.00 per month is allowed, until the maximum of \$180 per month is attained. The quarters for physicians and their families have been improved considerably by the construction of new staff houses at many of the hospitals.

If no civil service examination is pending, the

applicant may be appointed and will be required to take the next examination for the position of junior physician which is scheduled by the State Civil Service Commission, thus affording merit protection.

Advancement to the higher classification of senior physician, clinical director and assistant managing officer is provided through promotional examination.

Opportunities for graduate training in psychiatry while employed in the State service have been provided and will be augmented when the additional wards and research facilities in the new Psychiatric Institute are made available in the near future.

In addition to the above staff positions, two classes of training positions are also available: Internships in psychiatry for a period of six months are available at a stipend of \$26.25 per month with maintenance for self only. Such an internship may be served by physicians who have completed their fourth year of medical school but have not yet served a regular internship. Residencies in psychiatry are available for varying periods of service at \$52.50 per month with maintenance for self only. Applicants for the position of junior physician who have had no special training in psychiatry may be required to serve for a three months training period at the resident's salary. Physicians wishing to specialize in psychiatry to the extent of preparing for the examinations of the American Board of Psychiatry and Neurology, may prefer to serve a years residency in one of our State hospitals approved by the American Medical Association for this purpose.

Applicants should communicate with Mr. Charles E. Day, Director, State Department of Public Welfare, Springfield, Illinois, for further information.

WHERE TO FIND TRANSACTIONS OF THE ILLINOIS STATE MEDICAL SOCIETY

Northwestern University Medical School Library
Transactions 6-14 (1856-1863)
Transactions 21-48 (1871-1898)
John Crerar Library
Transactions 1-14 (1851-1863)

*No meetings were held in 1862 and 1863. Therefore there are no Transactions numbered 12 and 13.

Transactions 17-48 (1866-1898)
Rush Medical College
Transactions 6-48 (1856-1898)
University of Illinois Medical School Library
Transactions 22-48 (1872-1898)
Loyola U. School of Medicine Library
Transaction 34 (1884)

HISTORICAL DATA WANTED

To the Editor:

To Component County Societies of the Illinois State Medical Society: Those of you who attended the Peoria session of the Society will recall the very fine photographic exhibit arranged by Dr. Carl E. Black to set forth as fully as possible the history of the Illinois State Medical Society. A Committee on Archives is very anxious to add to this material. Further it is asking that each county society appoint a similar committee and that it secure from each of its members as much historical data as possible. This includes photographs, material from family scrap books, newspaper clippings and other material pertaining to physicians in Illinois or of those physicians who were once living in Illinois.

If you do not know what to do with your old minute books, please get them into the hands of the Committee on Archives.

Arrangements are being made to store all this material with Dr. H. M. Camp, Secretary of the Illinois State Medical Society. Your contribution should be sent to the undersigned or to Dr. Camp.

Dr. Carl E. Black, Jacksonville;
Dr. P. J. McDermott, Kewanee;
Dr. D. D. Monroe, Alton, Chairman.

PLEASE IDENTIFY PHOTOGRAPHS

Jacksonville, Illinois.

July 28, 1940.

To The Editor:

Many photographs of Illinois physicians were handed in at the annual meeting of the Illinois State Medical Society in May and others have been sent to me here. In a number of cases there was insufficient data to show who sent them.

I am publishing this notice in the ILLINOIS MEDICAL JOURNAL notifying those who have not received due acknowledgement to write me and I will be glad to express appreciation.

There is one set of six or eight excellent photo-

graphs that I do not know who handed them in. I would like to show these people proper appreciation. Publishing this item in the ILLINOIS MEDICAL JOURNAL will at least show the right spirit.

Carl E. Black, M. D.

PICTURES OF THE PAST PRESIDENTS
AND SECRETARY WANTED

Officers of the Illinois State Medical Society are extremely anxious to complete the file of pictures of all past presidents. There are a number missing and it is hoped that someone may be able to furnish copies to the Editor of the JOURNAL, Charles J. Whalen, M. D., 25 East Washington Street, Chicago.

President's Name	Year
Samuel Thompson	1851
C. N. Andrews	1854
A. H. Luce	1864
J. M. Steele	1865
S. W. Noble	1867
G. W. Albin	1871
Secretary's Name	Year
H. Shoemaker	1851

EXTRA COPIES AVAILABLE OF THE
CENTENNIAL NUMBER OF
THE JOURNAL

We have on hand a goodly number of the Centennial issue. (May, 1940) of the ILLINOIS MEDICAL JOURNAL. This particular number records the progress of medicine in Illinois during the past hundred years. It is really a granary of medical historical data. Postage, 10 cents. 6221 Kenmore Avenue, Chicago, Illinois.

MOUNTING FEDERAL TAXES

According to the Federal Tax Bulletin the NEW 1940 tax law drastically changes the entire structure of personal taxation. The BROADENED tax-base, and the sharply UPPEd surtax rates, make tax costs in all income brackets TREMENDOUSLY HIGHER — in some cases showing an increase over 1939 taxes of 285%.

The following comparison between the 1939 law and the NEW law shows how tremendous these INCREASES are for a married person:

Net income	1939 tax	NEW tax plus	
		SUPER-tax	% increase
\$3,000	\$8	\$30.80	285%
4,000	44	70.40	60
15,000	924	1,258.40	36
40,000	5979	9,552.40	60

Therefore, the new tax law — with higher income tax rates and new SUPER-tax — increases the tax payment 30 to 285 per cent.

EDUCATIONAL COMMITTEE
November and December, 1940

December 1940 brings to completion five post-graduate conferences in five different councilor districts of the state. The conferences in Mattoon and Alton were held in November and December.

The attendance at the meetings numbered 672, representing many different counties and communities.

A meeting of the Post-Graduate, Scientific Service and Educational Committees was called for early December at which time plans were made for carrying on post-graduate programs in a somewhat different form during the coming months.

Copies of all papers presented at the conferences were sent to doctors attending.

SCIENTIFIC SERVICE COMMITTEE

104 — Speakers presented scientific papers before medical groups. Special programs were arranged for the Tri County Medical Society, the Southern Medical Association, the North Central Medical Society and weekly meetings of the Will-Grundy County Medical Society.

The Educational Committee assisted county society secretaries in not only arranging the programs, but also in giving publicity to the newspapers and in notifying physicians.

The following information shows the counties receiving assistance:

Notices to doctors —

98 — Effingham County Medical Society meeting				
214 — Whiteside	"	"	"	"
99 — Bureau	"	"	"	"
278 — Perry	"	"	"	"
246 — Fulton	"	"	"	"
133 — Knox	"	"	"	"
167 — Henry	"	"	"	"
85 — Jefferson-Hamilton	"	"	"	"
64 — DeKalb County	"	"	"	"
60 — Randolph	"	"	"	"

Newspaper publicity for medical meetings —

56 — Releases for LaSalle County
48 — Releases for Bureau County
30 — Releases for Effingham County
55 — Releases for Whiteside County
103 — Releases for Fulton County
27 — Releases for Knox County
43 — Releases for Henry County
57 — Releases for DeKalb County
130 — Releases for Southern Illinois Medical Association
234 — Releases for Post-Graduate Conference
4 — Releases for North Shore Branch
50 — Releases for Chicago Medical Society public meeting

SPEAKERS' BUREAU

69 — Doctors presented popular health talks to lay organizations. Through the courtesy of the Chi-

cago Board of Education and the kindness of Dr. F. L. Rector of the American Society for the Control of Cancer, it was possible to have talks on CANCER given in the following Chicago schools —

Sullivan High School	—	300 present
Lane Technical School	—	1500 present
Austin High School	—	500 present
Manley High School	—	1550 present
Crane Technical School	—	1000 present
Steinmetz High School	—	460 present
Flower Technical School	—	2400 present
Taft High School	—	1500 present
Marshall School	—	550 present
Senn High School	—	3000 present

12,760

RADIO

12 — Radio talks were given over stations WJJD and WAAF in Chicago.

Copies of radio talks were sent to several downstate county societies for local use.

PACKAGE LIBRARIES

Calls for loan of the package libraries steadily increase.

The office of the committee is always glad to compile special material which may be requested by any doctor in the state.

One doctor using package library on a special subject wrote as follows —

"I returned that splendid list of papers by messenger and take this opportunity to thank you for your favor and trouble in the matter. The selection was exactly what I wanted and helped me considerably in making which I hope will prove a worth while paper, for the Drug and Chemical Section of the Credit Men's Association.

"You must have a wonderful organization and clipping bureau to be able to meet all comers in so splendid a way."

NEWSPAPER SERVICE

Articles written and approved on the following topics —

Your Most Dangerous Years	Appendicitis a Menace
Thanksgiving 1940	A Happy Recovery
Benjamin Franklin, The Benefactor	Smallpox Still a Menace
Measles Threatens	Winter Asthma
Your Health in 1941	Christmas Time Hazards
	Sniffles — 1941

1,040 — Editorial Style health articles to newspapers
 842 — Health columns to downstate newspapers
 116 — Health columns to Chicago newspapers
 16,852 — Articles to lay leaders throughout the state

MISCELLANEOUS

Special publicity was given to the first lay meeting sponsored by the Chicago Medical Society. 35 letters were sent to prominent leaders. 500 mimeographed and 500 printed notices were sent to libraries, health chairmen, etc., announcing the meeting.

94 — letters were mimeographed for a Councilor.
 Respectfully submitted
 Jean McArthur

THREE QUARTERS OF A CENTURY FOR PARKE, DAVIS & COMPANY

The year 1941 marks the Diamond Anniversary of the founding of Parke, Davis & Company, a firm which had its inception in a small drug store in the City of Detroit, Michigan, and which, during the past seventy-five years, has become the world's largest makers of pharmaceutical and biological products.

From the very beginning, back in 1866, Parke, Davis & Company had engaged in research work with the object of making available to pharmacists and physicians, medicinal preparations of the highest degree of accuracy.

In the early 70's pharmaceutical progress meant the discovery of new vegetable drugs. Energetic — and extensive — explorations gave to the medical profession such valuable and widely used drugs as Cascara and Coca. Then, in 1879, came one of Parke-Davis's greatest contributions to pharmacy and medicine — the introduction of the first chemically standardized extract known to pharmacy. Desiccated Thyroid Gland, the first endocrine product supplied by the Company, was introduced in 1893. One year later, Parke-Davis established the first commercial biological laboratory in the United States. In 1897 came the introduction of the first physiologically assayed and standardized extracts. And throughout these early years, the fundamental Parke-Davis policy — precision in pharmaceutical manufacture — was crystallizing.

In addition to its Detroit headquarters, branches and depots are maintained in important cities throughout the country, the list including Atlanta, Baltimore, Boston, Buffalo, Chicago, Cincinnati, Dallas, Denver, Indianapolis, Kansas City, Minneapolis, New Orleans, New York, Philadelphia, Pittsburgh, San Francisco, St. Louis, and Seattle.

In the foreign field, to care for the Parke-Davis business which extends to every quarter of the globe, branches are located in London, England; Sydney, N.S.W.; Walkerville, Ontario; Montreal, Quebec; Toronto, Ontario; Winnipeg, Manitoba; Bombay, India; Havana, Cuba; Buenos Aires, Argentina; Rio de Janeiro, Brazil; and Mexico City, Mexico.

BEWARE OF TULAREMIA

Rabbit Fever is on the increase. A recent report of the Public Health Service shows that from 1930-1939, there were 1927 cases of Tularemia or rabbit fever in Illinois. The State of Ohio followed second with 900 cases and Missouri third with 827.

Tularemia is an acute infectious disease caused by *Bacterium tularense* and occurs under natural conditions in over 20 kinds of wildlife, especially in wild rabbits and hares. Man becomes infected by contact of his bare hands with the raw flesh and blood of these animals or by bites of blood-sucking ticks and flies which have previously fed on animals infected with *Bacterium tularense*.

Tularemia symptoms include fever, chills, sweating,

headache, vomiting, malaise and prostration. In the great majority of cases, a sore or ulcer marks the place of entrance of the infection. Because tularemia easily develops into a form of pneumonia, it is a very dangerous disease.

Anyone handling rabbits should wear rubber gloves. Freezing the meat does not kill the tularemia germs, but cooking does. One can therefore see the importance of cooking rabbit until it is thoroughly done.

SOCIETY OF ILLINOIS BACTERIOLOGISTS PROGRAM Jan. 31, 1941

Experiences with Microbiological Assay of Riboflavin (Vitamin G). H. W. Cromwell, Abbott Laboratories

Some Recent Studies in Anaphylaxis. Dr. Carl A. Dragstedt, Northwestern University

The Bacteriology of Brick Cheese, Dr. J. C. Garey, University of Illinois (Urbana)

Laboratory Aids in Diagnosis and Treatment of Pneumonia. Dr. Wayne W. Fox, Northwestern University and Evanston Hospital

MEMBERSHIP AND FELLOWSHIP

Every Member in good standing in the constituent state medical association where he is engaged in practice, whose name is officially reported to the Secretary of the American Medical Association for enrollment, becomes automatically a Member of the American Medical Association and is not called on, as such, to pay any dues or to contribute financially to the Association.

Members of the American Medical Association who graduated at recognized medical schools are eligible to apply for Fellowship.

To qualify as a Fellow, a Member in good standing is required to make formal application for Fellowship, to pay Fellowship dues and to subscribe for *The Journal*. Applications must be approved by the Judicial Council. Fellowship dues and subscription to *The Journal* are both included in the one annual payment of \$8.00, which is the cost of *The Journal* to subscribers who are not Fellows.

Only those Members who qualify as Fellows are eligible for election as officers; none but Fellows may serve as Members of the House of Delegates; none but Fellows may register at the annual sessions of the Association or may participate in the work of its scientific sections.

Members of state medical associations pay dues to those bodies, but they pay nothing to the American Medical Association. Fellows pay dues and subscription to *The Journal* in the sum of \$8.00 a year, which has nothing to do with county or state dues.

According to the amendment to the By-Laws of the American Medical Association, no Member may hold membership in two state medical associations concurrently.

Application form for Fellowship may be obtained by request directed to the American Medical Association, 535 No. Dearborn Street, Chicago, Ill.

MISSISSIPPI VALLEY MEDICAL SOCIETY 1941 ESSAY CONTEST

The Mississippi Valley Medical Society offers annually a cash prize of \$100.00, a gold medal, and a certificate of award for the best unpublished essay on any subject of general medical interest (including medical economics) and practical value to the general practitioner of medicine. Certificates of merit may also be granted to the physicians whose essays are rated second and third best. Contestants must be members of the American Medical Association who are residents of the United States. The winner will be invited to present his contribution before the next annual meeting of the Mississippi Valley Medical Society at Cedar Rapids, Iowa, Oct. 1, 2, 3, 1941, the Society reserving the exclusive right to first publish the essay in its official publication — the MISSISSIPPI VALLEY MEDICAL JOURNAL (incorporating the RADIOLOGIC REVIEW). All contributions shall not exceed 5000 words, be typewritten in English in manuscript form, submitted in five copies and must be received not later than May 1, 1941. The winning essay of the 1940 contest appears in the January, 1941 issue of the MISSISSIPPI VALLEY MEDICAL JOURNAL (Quincy, Ill.) Further details may be secured from Harold Swanberg, M. D., Secretary, Mississippi Valley Medical Society, 209-224 W.C.U. Building, Quincy, Illinois.

THIRD ANNUAL CONGRESS ON INDUSTRIAL HEALTH

Wednesday, January 15, 1941

CLINICS AND DEMONSTRATIONS IN INDUSTRIAL MEDICINE, HYGIENE AND TRAUMATIC SURGERY

Arranged By

THE CHICAGO MEDICAL SOCIETY

Carnegie-Illinois Steel Corporation

South Chicago, Illinois and Gary, Indiana

Dr. Philip Kreuscher and Associates

Clinic and demonstration available to a limited number of physicians and surgeons interested in care of the injured. Program includes

1. Treatment of Fresh Wounds.
2. Treatment of Burns. (Motion Picture)
3. Fracture Management
4. Prevention and Management of Heat sickness.
5. Prevention and Treatment of Carbon Monoxide Poisoning.
6. Demonstration and Discussion of Safety Methods.
7. Plant Inspection.

Transportation will be provided leaving the Palmer House at 9 a. m. Luncheon available on the plant premises. Apply for tickets and complete program at Registration Desk of the Third Annual Congress on Industrial Health, Palmer House, January 13-14

University of Illinois College of Medicine
1853 West Polk Street, Chicago

10 a. m. Clinic and Symposium on Industrial Dermatitis. Francis E. Seneat, M. D. Presiding.

Criteria for diagnosis, diagnostic techniques and dem-

onstration of patients arranged with the assistance of the Joint committee on Industrial Dermatoses of the Section on Dermatology and Syphilology of the American Medical Association, and of the American Dermatological Association.

2 p. m. Symposium on Occupational Diseases. Lloyd L. Arnold, M. D. Presiding.

The Industrial Hygiene Survey

An outline of tested procedure to detect and evaluate industrial health exposures, adaptable to both large and small plants.

K. M. Morse, Industrial Hygienist

Illinois State Department of Public Health

Principles of Control over Industrial Health Exposures.

A description of progressive steps necessary to control industrial health exposures.

Donald E. Cummings, Dir. Division of Industrial Hygiene, University of Colorado School of Medicine and Hospitals, Denver.

Pitfalls in Occupational Disease Diagnosis.

A discussion of ways in which occupational intoxications simulate other diseases, with emphasis on differential diagnosis.

M. H. Kronenberg, M. D. Chief of Division of Industrial Hygiene, Illinois State Department of Public Health.

Occupational Disease Testimony.

Instruction for the physician in effective presentation of medical testimony on occupational diseases before workmen's compensation administrators.

James J. McKenna

Chicago

At convenient times during the day there will be demonstrations of laboratory and field equipment used to detect and evaluate industrial health exposures. These demonstrations are arranged by the Division of Industrial Hygiene of the Illinois State Department of Public Health.

6:30 P.M. Dinner, Chicago Women's Club

8:00 P.M. Evening Program

Industrial Health — A Medical Opportunity

Stanley J. Seeger, M. D., Chairman, Council on Industrial Health, American Medical Association.

Medical Service for the Small Plant

Anthony J. Lanza, M. D., Assistant Medical Director Metropolitan Life Insurance Co., N. Y.

The Control of Syphilis in Industry

Harold A. Vonachen, M. D., Medical Director, Caterpillar Tractor Company, Peoria.

WOMAN'S AUXILIARY TO THE ILLINOIS STATE MEDICAL SOCIETY

Report of the Eighteenth Annual Meeting of the

Woman's Auxiliary to the American

Medical Association

As President of the Woman's Auxiliary to the Il-

linois Medical Society, it was my privilege to be a delegate to the National Convention held in New York City June 10th to 14th, 1940.

The courtesies shown to the visiting auxiliary members and guests by the New York ladies will long be remembered.

The Auxiliary members of Illinois were especially proud of our own Mrs. Rollo K. Packard who presided so graciously and efficiently as President of this Convention.

The general sessions were extremely instructive and well attended. It was an inspiration to this chairman to meet the State Presidents, and to confer with them regarding our various problems.

I am happy to report that it was the largest convention ever held. The registration chairman reported at the second session a total attendance of 908.

It would require many pages to outline and describe in detail the sessions and social functions enjoyed by the visiting ladies.

The following is a brief summary of the activities:

Sunday afternoon, June 9th, a tea in honor of Mrs. Rollo K. Packard was given at Sherrys. There were over 100 present, among them many distinguished guests.

Monday morning, June 10th, a pre-convention meeting of the Board of Directors was held with Mrs. Packard presiding. At 7:00 P.M. the Board of Directors were guests of the Woman's Auxiliary to the Medical Society of the State of New York, at dinner, in the Empire Room of the Waldorf-Astoria.

Tuesday morning, June 11th, the first session was called to order in the ballroom of the Hotel Pennsylvania at 9:30 A.M. A total of 552 were present. This session recessed at 12:15 to reconvene after luncheon. This luncheon was held at 12:30 in the rose and silver banquet room of the Hotel Pennsylvania, in honor of the past presidents of the Auxiliary, with an attendance of 396. Addresses were given by Dr. Rock Sleyster and Dr. Morris Fishbein.

The second session reconvened Wednesday morning at 9:45 A.M. with a total of 908.

"In Memoriam" service was read by Mrs. Frank M. Haggard of Texas, to the accompaniment of appropriate piano music played by Mrs. Walter Cane, a member of the Nassau County Auxiliary.

The meeting recessed at 12:30 o'clock to reconvene after luncheon which was held at 1:00 o'clock in honor of the President, Mrs. Rollo K. Packard, with an attendance of 256.

The President announced that Father Alphonse M. Schwitalla, Dean, St. Louis University School of Medicine, was unable to be present, due to cancellation of airline schedules. Addresses were given by Dr. Nathan B. Van Etten, President elect of the American Medical Association, and Dr. C. G. Heyd, Past-President of the American Medical Association.

Mrs. Harry Dooley, President of the Woman's Auxiliary to the Illinois State Medical Society, presented Mrs. Packard with a silver tray, a gift from the members of the State Auxiliary. Mrs. A. I.

Edison, delegate from Illinois, presented Mrs. Packard with a basket of flowers from the Woman's Auxiliary to the Chicago Medical Society.

This gala week closed with the annual dinner which was held at 6:30 o'clock, Thursday evening, in the Hotel Pennsylvania roof garden. This dinner preceded the President's Reception and Ball held at the Waldorf-Astoria, where the American Medical Association was host.

Marion Dooley, President

WOMAN'S AUXILIARY COUNTY NEWS

Will-Grundy was honored to have as their guest, Nov. 11th, State President, Mrs. Harry Dooley. The meeting was held in the home of Mrs. W. S. McSweeney, 901 Glenwood Ave., Joliet, Ill. Following a dessert luncheon, the president, Mrs. G. H. Woodruff, presented the guest speaker, Mrs. Dooley, who spoke on "The Benevolence Fund." Assisting Mrs. McSweeney were, Mesdames L. J. Wilhelmi and Robert Lennon.

The following evening the members of the Auxiliary were guests of the Catholic Women's League. The speaker, Dr. Clifford J. Barborka of the Illinois Medical Society discussed the subject "Diet."

Peoria County had the extreme pleasure of being entertained by the Board of the Municipal Tuberculosis Sanitorium, Nov. 12. Thirty-five members enjoyed a tour of the grounds and buildings, after which dinner was served. Mrs. O. E. Barbour, President conducted the business meeting.

Miss Zoe Velde, Sec'y, of the Peoria T. B. Christmas Seal Sale spoke on the Sale, and Dr. Maxim Pollak, told about the treatment and care of the patients and the management of the Sanitorium. The Chairman and Co-Chairman were Mrs. Carl Sibilsky and Mrs. James Walsh.

Adams County Auxiliary, held their Nov. meeting in the parlors of the Hotel Lincoln-Douglas, Quincy, Ill. The President Mrs. J. F. Ross, presided. Fifteen members and one guest were present. In the absence of Dr. R. A. Harris who was to have been the guest speaker, Mrs. Harris read his paper, on the "History of Medicine and Anesthesia." Hygeia was reviewed.

On Nov. 26th Mrs. Harry Dooley, State President addressed the group on the "Aims of the Auxiliary," and the "Benevolence Fund."

Cook County, Woman's Auxiliary to the Chicago Medical Society held a meeting in the Narcissus Alcove at Marshall Fields, on Dec. 4th, Honoring the Branch Hygeia Chairmen. There were forty-four members and two guests present. Following the luncheon, the president, Mrs. Bornemeier, introduced the chairmen and then turned the meeting over to the Program chairman, Mrs. J. Soukup, who presented the guest speakers.

Mr. Chas. S. Mohler, Advertising Manager of *Hygeia*, gave some very interesting statistics on *Hygeia* and told of its far-reaching influence in doctors offices. Two independent surveys were made

showing an approximate readership of 2,000,000, in doctors offices each month.

Miss Agnes Fletcher, of Calumet High School, spoke of the valuable influence of Hygeia upon the pupils. In this school alone, forty copies per month are used to supplement regular text-books on Physical Education.

We are very proud of the fact that the National Hygeia chairman, Mrs. W. J. Wanninger and the State Hygeia chairman, Mrs. E. M. Egan are from Cook County.

Bureau County, held a regional meeting in connection with the annual North Central Ill. Medical Association, on Dec. 5th at Princeton, Ill.

The program included a Tea in the home of Dr. and Mrs. M. A. Nix, in honor of Mrs. Harry J. Dooley, State President and guest speaker of the evening. Dinner was served at the Presbyterian Church.

The president, Mrs. A. B. Troupa and the Chairman, Mrs. M. A. Nix, conducted the evening meeting. Mrs. Dooley gave an address on "The Aims and Purposes of an Auxiliary," and Dr. Harold Camp, of Monmouth, Ill., spoke on "What the Auxiliary Can Do to Help Medicine."

TRI-COUNTY

(Johnson, Pope, Massac)

It is with a great deal of pleasure that we welcome a new Auxiliary, Tri-County, representing, Johnson, Pope, and Massac Counties, located in the most southern portion of our Great State. You are joining us at a time when you can do much in helping to carry forward a program of many important projects. If Medicine, which we all love, is to be preserved as an institution based upon the sound principles upon which it was built and progress under new and heavy demands, all of our strength must be mustered, to help direct it along its proper course. We welcome you into our association, Tri-County, we salute you as a new company in our army, Medicine Must Go Forward.

The Officers and Chairmen are as follows:

Pres., Mrs. Warner A. Gray, Metropolis, Ill.

Vice Pres., Mrs. L. S. Barger, Galconda, Ill.

Sec'y., Mrs. W. J. Anderson, Jr., Vienna, Ill.

Treasurer, Mrs. J. A. Ward, Metropolis, Ill.

Historian, Mrs. E. A. Veach, Vienna, Ill.

Membership, Mrs. V. M. Timm, Metropolis, Ill.

Publicity, Mrs. J. A. Fischer, Metropolis, Ill.

Program, Mrs. W. J. Anderson, Jr., Vienna, Ill.

Hygeia, Mrs. C. H. Miller, Vienna, Ill.

Public Relations, Mrs. Stephen P. Ward, Galconda, Ill.

Benevolence, Mrs. V. O. Decker, Metropolis, Ill.

Revisions, Mrs. J. H. Gann, Brookport, Ill.

Legislative, Mrs. W. Thompson, Cypress, Ill.

Social, Mrs. J. A. Ward, Metropolis, Ill.

Mrs. C. W. Stuart
Chairman, Press & Publicity
330 N. Austin Blvd.
Oak Park, Ill.

ASA S. BACON TO RETIRE AS SUPERINTENDENT OF PRESBYTERIAN HOSPITAL

After more than 40 years of service at Presbyterian Hospital, Asa S. Bacon will retire as superintendent on January 1, 1941, it was announced today by John McKinlay, president of the hospital. Mr. Bacon's successor will be J. Dewey Lutes, who has been superintendent of Ravenswood Hospital for the past nine and one-half years and is well known in activities of hospital organizations.

"In appointing Mr. Lutes the hospital board feels that it has chosen a forward-looking hospital executive whose nineteen-year record of successful hospital administration indicates that he is well qualified to take the helm at Presbyterian Hospital."

"Mr. Bacon's long record of outstanding service at Presbyterian Hospital and his broad interest in the improvement of hospital service generally have made him a national figure. His more than 40 years' tenure in one institution spans a period of unprecedented advances in both medical science and hospital service, and with his own thinking as a hospital executive has kept pace and often been in the vanguard.

Mr. Bacon is known in hospital circles as the originator of many improvements in hospital service. He is a trustee of the American Hospital Association and has been its treasurer for 35 years, with the exception of one year when he served as president. In recognition of his long service, the Association last February named its reference library at 18 East Division St. the Asa S. Bacon Library.

During his nearly ten years as superintendent at Ravenswood Hospital Mr. Lutes has brought about many improvements in the hospital and its service. The number of admissions has grown to such an extent that the institution now needs larger quarters. Physical improvements and new equipment have increased the value of the hospital plant by \$250,000.

Early in his hospital career Mr. Lutes recognized the need for improvements in hospital administration and business practices. In line with this thinking he joined Mr. Bacon as a co-founder of the Chicago Hospital Association and became its first president. The Association is now known as the Chicago Hospital Council. Mr. Bacon and Mr. Lutes also have been closely associated as co-founders, charter fellows, and officers of the American College of Hospital Administrators, which has done much to raise professional standards in the United States and Canada. Both are directors and Mr. Lutes is vice-president of the Hospital Service Corporation of Chicago (Plan for Hospital Care). Mr. Lutes is a trustee and former president of the Hospital Association of Illinois and a member of the house of Delegates of the American Hospital Association.

Doctor (after examination): "Madam, you have a constitution of iron."

Obese Patient: "I have often wondered what made me so heavy."—*Butchers' Advocate and The Food Merchant.*

ALITIC PARKINSONISM

P. Solomon, R. S. Mitchell and M. Prinzmetal. (*Journal A. M. A.*, 108:1765 (May 22) 1937), report a series of twenty-eight cases suffering from classic post-encephalitic parkinsonism were treated with either "Benzedrine Sulfate" (benzyl methyl carbinamine sulfate, S. K. F.) alone or with the addition of scopolamine or stramonium. Results according to symptoms are as follows:

Symptom	Lack of Energy	Inability to work	Lack of Strength	Tremor	Rigidity	Drowsiness	Oculogyric Crisis
No. of patients exhibiting symptoms	26	28	26	16	26	24	8
% improved as to symptoms.	96%	79%	73%	44%	77%	95%	100%

Fifteen, or 53 per cent, were improved from "Benzedrine Sulfate" alone and twenty-six, or 93 per cent, reported improvement from "Benzedrine Sulfate" with the addition of stramonium or scopolamine. "Benzedrine Sulfate" was found to be most effective when used in combination with these two drugs. Results in oculogyric crisis were particularly striking. This symptom was eliminated in six and greatly diminished in two of the eight patients subject to these attacks.

Additional experiments were tried with ten cases of arteriosclerotic parkinsonism and in a selected group of twenty-two psychoneurotic. Results were not favorable in these conditions and in some cases untoward effects developed.

The average maintenance dose in post-encephalitic parkinsonism was 10-20 mg. two or three times a day, although as much as 160 mg. a day for three weeks was taken by one patient without apparent harm. No evidences of tolerance or habit-formation were observed.

DIABETES MELLITUS

Yesteryear—Insulin therapy established. Low carbohydrate diet.

Today—Protamine insulin has been developed. This gives longer sustained action and permits less frequent administrations than with insulin. Higher carbohydrate diet.

BUERGER'S AND RAYNAUD'S DISEASE

Yesteryear — Only general therapeutic measures known.

Today—Now fever therapy, diathermy, resection of sympathetic ganglia and the use of the Pavaex machine have definitely aided in the therapy.

ENDOCRINOLOGY

Yesteryear—Endocrine therapy chiefly empiric.

Today—Now a definite established basis that the pituitary gland is the key gland. Discovery and proven therapeutic value of Cortin, Antuitrin-S, Theelin, Thyroxin, Parathormone and Insulin. Established relationship of parathyroid tumor to bone disease. Recognition and treatment of the symptom-complex of hypoadrenism, basophilic adenomata of pituitary and adenomata of suprarenals.

Original Articles

THE TREATMENT OF CUTANEOUS VASCULAR NEVI. (HEMANGIOMAS)

FRANK E. SIMPSON, M. D.

Collaborators

J. E. BREED, M. D.

J. S. THOMPSON, Ph.D.

CHICAGO

Vascular nevi are tumors composed of newly formed blood vessels supported by a variable amount of connective tissue.

The most striking feature of cutaneous vascular nevi is their color which is always some shade of red or blue.

A subcutaneous vascular nevus may cause a localized bulging of the overlying skin which may be reddish, bluish or of normal skin color.

Usually congenital, a vascular nevus may appear a few days or weeks after birth and very rarely in later life.

Once it has appeared, a nevus may remain stationary or grow — rapidly or slowly.

A nevus may resolve spontaneously but one should not delay treatment for more than a few weeks in anticipation of its disappearance.

Growing nevi should be treated immediately.

Ulcerating or bleeding nevi should also receive immediate treatment.

Involving the lips, a nevus may hinder nursing and if it presses on the neck may obstruct swallowing and breathing and seriously affect nutrition.

In such nevi, immediate treatment is indicated.

METHODS OF TREATMENT

Prior to the advent of radium, attempts were made to remove nevi by many different methods.

They were excised, burned with the cautery, frozen with liquid air or carbon dioxide snow, injected with boiling water or chemicals, cauterized with nitric acid or other substances, destroyed by electrical methods, treated with x-rays, etc.

Many of these methods were very painful and some were actually dangerous.

Frequently the nevus was made more unsightly by the production of scars, keloids, contractions or an uneven color.

RADIUM TREATMENT

At the present time, radium treatment is the

method of choice in most vascular nevi, although surgery in pedunculated nevi, electrolysis in "spider" nevi and the Kromayer lamp in faintly colored port wine "stains" are also of great value.

Between 1912 and 1940, a period of 28 years, we treated with radium more than 660 cutaneous vascular nevi. Many of these cases have been under periodic observation since the beginning of treatment.

In some cases, little improvement was brought about.

In a majority of cases, there was a marked change for the better.

In favorable cases, the nevus resolved leaving little or no trace behind.

Methods of Using Radium. Two different methods of using radium have been advocated — 1. surface application 2. radium "puncture." We mention the latter method only to condemn it. In our opinion, radium "puncture" should never be used in cutaneous vascular nevi.

Surface Application. (a) Radium plaques.

This type of apparatus was devised in 1905 by Wickham and Degrais of Paris.

Radium plaques are made of metal or some soft material such as linen or rubber, on which the radium salt is evenly spread.

Plaques vary in diameter from 1 to 4 or more cm., the shape being usually round or square.

They may contain from 5 to 50 or more mg. of radium element.

Linen or rubber plaques are known as "toiles." A "toile" may be placed in close contact with the skin or at a distance of two or more mm., by interposing flexible rubber sheeting between the "toile" and the skin. The latter method is preferable.

The metal screening on the face of the "toile" may be 1/10 mm. of lead, although screens of different metals and thicknesses may be used.

The great advantage of "toiles" is their flexibility, which permits of their being bent to the contour of the skin surface.

The chief disadvantage of "toiles" is their fragility.

Due to the constant bombardment of the linen or rubber base by the rays, "toiles" may crack or disintegrate after some months or years and must be remade.

There is also some danger of loss of the radium.

As a substitute for the "toile," one can make up an applicator with glazed radium plaques.

Assume an area of 16 sq. cm. is to be treated.

Flexible rubber sheeting measuring 4 x 4 cm. and 2 mm. thick may be used as a base for the applicator.

A screen of lead foil 1/10 mm. thick is placed on the rubber sheeting although other screens of different metals and thicknesses may be used to suit individual cases.

Four glazed radium plaques, each measuring

A movable, lead shield with 4 sides, open at the top and bottom and operated by means of a counter-weight, is then lowered around the balsa wood block so as to enclose it laterally.

A flat, metal box, containing the radon tubes laid side by side, is then placed inside the lead shield through the opening in the top and allowed to rest on the balsa wood block.

The sides of the lead shield protect both patient and operator from the lateral rays.

While the distance of the radon from the skin



Fig. 1. Dark red vascular nevus — group 4 — girl 6 weeks old. Sept. 1913. Referred through the courtesy of Dr. David Lieberthal.



Fig. 2. Patient in Fig. 1. 26 years after radium treatment. Oct. 1939.

2 x 2 cm. and of 1/4 strength, are laid, face down, on the lead foil and secured with adhesive tape.

The whole apparatus is then wrapped in rubber dam.

This applicator gives a uniform radiation effect and can be bent, though somewhat imperfectly, to conform to the contour of the skin surface.

A backing of sheet lead, 1 mm. thick, may be used to hold the applicator in position after it is bent.

(b) Radon "bomb."

This apparatus may contain 1000 or more mc. of radon, screened with 2 mm. of silver.

In the practical application of the radon "bomb," a balsa wood block, measuring e.g. 6 x 6 x 6 cm., is first strapped to the skin with adhesive tape.

may be varied by using balsa wood blocks of different heights, it should seldom be less than 6 cm. unless one has had special experience with the method.

PRECAUTIONS

During radium treatment, normal areas, such as the eyes, etc., should be protected with pieces of lead or gold.

Undesirable effects from radium should be carefully guarded against by taking infinite pains with the technic.

Principles of Technic. The object of treatment is chiefly to decolorize evenly and in many cases to level the nevus, so that it will be less conspicuous.

Inflammatory radium reactions should be avoided.

Marked inflammatory reactions may result in later months or years in telangiectasia, atrophy or other sequelae which ruin the cosmetic effect.

Even very small doses, insufficient to produce inflammatory reactions, may cause similar results if treatment is persisted in over long periods of time.

Minimum dosage should always be given at the beginning of a course of treatment until the sensitivity of the skin and the results have

half-hour seances on successive or alternate days.

Inflammatory radium reactions should be avoided.

Group 2. In flat, infiltrated nevi, which do not fade momentarily on pressure, the radium plaque technic may be used with slightly larger dosage than that permissible in group 1.

A very mild radium reaction — slight erythema and scaling — may cautiously be produced. Reactions should rarely be repeated.

Group 3. In elevated, hard nevi, which do



Fig. 3. Subcutaneous and cutaneous vascular nevus — groups 4 and 5 — girl 11 months old. July 1930.



Fig. 4. Patient in Fig. 3. 10 years after radium treatment. Oct. 1940.

been noted. Infants should not be given over one-third or one-fourth the dosage permissible in adults.

Subtle changes in the skin and the nevus may go on long after radium treatment has been stopped.

If a second course of treatment is necessary, it should not be given until at least several months have elapsed and the dosage should always be less than that employed in the first course.

As vascular nevi of different types may be present in the same tumor the technic must be carefully adapted to the character of the area under treatment.

Technic in Special Groups. Group 1. In flat, superficial nevi, which fade momentarily on pressure, the radium plaque technic may be used.

A total of from 3 to 4 hours may be given in

not fade momentarily on pressure, the radium plaque technic may be used with slightly larger dosage than that permissible in group 2. The precautions about reactions previously mentioned should be observed.

Group 4. In elevated, soft nevi, which fade and recede momentarily on pressure, the radium plaque or the radon "bomb" technic may be used.

In nevi that project only a few mm., the radium plaque technic may be used; in those that project several cm., the radon "bomb" should usually be employed.

With the radium plaque technic, a total of from 6 to 8 hours may be given in half-hour seances on successive or alternate days.

With the radon "bomb" technic, a total of approximately 3000 mc. hrs. may be given at a distance of 6 cm. in 12 seances on successive

or alternate days. Inflammatory radium reactions should be avoided.

In this group, the results of radium treatment are superior to those obtainable by any other method

Group 5. In deep subcutaneous nevi, the radon "bomb" technic should be used.

A total of approximately 5000 mc. hrs. may be given at a distance of 7.5 cm. in 12 sances on successive or alternate days.

Inflammatory radium reactions should be

Bad effects from radium are almost always due to too strong doses or to crude methods of using it.

ADVANTAGES OF SURFACE RADIUM TREATMENT

1. There is no pain. During treatments infants frequently take their daily nap.
2. Treatment may be begun in earliest infancy.

There is no ground for the statement that babies should reach a certain age, e.g. 2 or 5



Fig. 5. Bluish-red vascular nevus — groups 4 and 5 — boy 5½ months old. Feb. 1938.



Fig. 6. Patient in Fig. 5. 2¾ years after radium treatment. Oct. 1940.

avoided.

In this group, the results of radium treatment are superior to those obtainable by any other method.

DIFFICULTIES

Some of the difficulties in getting a good cosmetic result are:

1. In infants, the nevus by reason of neglect may be allowed to progress and cause destruction of tissue and scar formation.
2. There may be a marked deformity due to the presence of a large amount of connective tissue in the tumor. While the color may be improved in such cases it may be impossible to remedy the deformity completely.
3. In many cases, previous treatment with radium or other agents may have ruined the texture of the skin.

years, before radium treatment is begun.

In our opinion, the earlier babies are treated the better.

Some of our best results have been obtained in infants in whom treatment was begun at the age of a few weeks.

A nevus present at birth or appearing shortly after should be carefully observed. If it does not show a tendency to subside quickly it should be treated without delay.

In some babies, in whom involvement of the lips hinders nursing or pressure on the throat obstructs swallowing or breathing, danger to life may be averted by prompt treatment.

3. In selected cases, the results of radium treatment are excellent and superior to those obtainable by any other method.

The secret of cosmetic success lies in the avoid-

ance of inflammatory radium reactions.

BIBLIOGRAPHY

1. Wickham and Degrais. Radium Therapy. Funk and Wagnalls Co., N. Y., 1910. PP. 181-223.
2. Simpson, F. E. Radium in Skin Diseases. J.A.M.A. 61: PP. 80-83, 1913.
3. Ibid. Radium as a unique agent in Dermatologic Therapeutics. Chicago Med. Recorder, Aug. 1913. 35: PP. 412-424.
4. Ibid. Radium its use and limitations in Skin Diseases. J.A.M.A. 63: PP. 737-741, 1914.
5. Simpson, F. E. Radium Therapy — Remarks on the use of Radium in deep-seated malignant diseases and in dermatology. Ill. Med. Jour. 30: PP. 123-126, 1916.
6. Ibid. Radium Therapy, Oxford Surgery, 1918. Sec. 14. V: PP. 401-448.
7. Ibid. Radium Therapy, C. V. Mosby Co., St. Louis, 1922. PP. 258-283.
8. Ibid. Radium in the treatment of vascular nevi. Surg. Gyn. Obst. 38: PP. 407-411, 1924.
9. Ibid. Die Technik Der Anwendung Radioaktiver Substanzen, Lehrbuch der Strahlentherapie, Urban and Schwartzberg, Berlin, 1925. Vol. I. PP. 577-611.
10. Ibid. Radium in the treatment of cancer and various diseases of the skin. J.A.M.A. 67: PP. 1508-1511, 1926.
11. Simpson, F. E. & Flesher, R. E. Radium in the removal of Birthmarks. Clinical Medicine and Surgery. Aug. 1927.
12. Kaplan, I. I. Radiation Therapy. Oxford University Press. 1937. PP. 109-116.
13. Pohle, E. A. Clinical Roentgen Therapy, Lea & Febiger, Phil., 1938. PP. 140.
14. Delario, A. J. A handbook of Roentgen & Radium Therapy. F. A. Davis Co., 1938. PP. 42.
15. MacKee, G. M. X-rays and radium in the treatment of diseases of the skin. Lea & Febiger, Phil., 1938. PP. 649-658.
16. Simpson, F. E., Breed, J. E., and Thompson, J. S. Radium in the treatment of diseases of the skin. Ill. Med. Jour. 75: PP. 521-542, 1939.
17. Degrais, Paul. Traite Pratique De Curietherapie. (La Curietherapie en Dermatologie) Paris, 1939. Chapt. IV. PP. 52.
18. Simpson, F. E., Breed, J. E. and Thompson, J. S. Radium Treatment of Angiomas. Read before American Radium Society. New York, June, 1940. (To be published).

POSTOPERATIVE THROMBOSIS AND EMBOLISM

GEZA DE TAKATS, M.D., F.A.C.S.

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Postoperative thrombosis and embolism continue to be one of the unexpected, dreaded and seemingly unavoidable complications of surgery. While there has been a gradual reduction in mortality following major surgical procedures, owing to better preoperative care, improved technique, better anesthesia and alert postoperative management, the incidence of postoperative thrombosis and embolism has not decreased. On the contrary, a number of statistics have become available during the last ten years, registering an increased frequency of this complication. Burke¹ has succinctly enumerated the factors which in his opinion are responsible for this increase as follows:

1. Lengthening of the average life expectancy,

2. consequent increase in number and longer survival of cardiovascular patients, 3. increase in the hospitalization of patients, the practice of "going to bed" with less provocation than in harder days, 4. larger volume of surgery on aged and handicapped patients, and 5. greater use of intravenous therapy and diuretics.

Whatever other causes there may be, the problem is with us and it behooves every surgeon to institute measures which reasonably diminish the incidence of thrombosis effectively, treat the thrombosis once it has occurred, attempt to prevent embolism and treat it with all available means.

This is an ambitious program and in order to have any results at all, the measures must be simple and capable of being carried out in any general hospital.

The Prevention of Postoperative Thrombosis: It is generally known that advanced age, obesity, and operations requiring laparotomies raise the incidence of embolism. Of our own series recently studied by Jesser² pelvic laparotomies were followed by far the largest percentage of pulmonary emboli. A collective review of the more recent statistics is given by Ochsner and DeBakey.³ Here we are interested in a general way in factors that predispose to thrombosis with the idea of eliminating or correcting them if possible.

Hemoconcentration. Whenever blood loses some of its fluid content, so that its red cell count becomes high, together with its viscosity and specific gravity, the clotting tendency is increased. This not only occurs in dehydration due to vomiting, inability to take liquids by mouth or diarrhea, but is typical of the delayed, secondary shock following operation or burns. Hemoconcentration is also present in states where blood proteins are diminished as the fluid then will pass out into the tissues, as in nephrosis, in peritonitis or large fibrinous exudates in the pleural cavity. This hemoconcentration is most readily detected by a red cell count and hemoglobin determinations, although recently a simple apparatus for the determination of specific gravity has also become available. Whenever

*Paper read at the joint Session of the Surgical Section and the Central States Society of Industrial Medicine and Surgery, Illinois State Medical Society, Peoria.

May 22, 1940. From the Department of Surgery, University of Illinois, and St. Luke's Hospital, Chicago.

hemoconcentration is detected its correction must be attempted by the restoration of fluid balance and of blood proteins; should they be below 6 grams per 100 cc. of blood. It perhaps is not generally appreciated that every major operation is followed by a temporary hemoconcentration due to a subclinical shock. The extent and duration of this may become an important factor in postoperative thrombosis and is now being investigated by Rosenthal and Lambert of the University of Illinois.

A typical example of the effect of hemoconcentration on vascular clotting is seen in polycythemia. Here coagulation time is short and thrombosis frequently occurs both in the arterial and venous sides. In a severe burn, seen with Dr. Paul Greeley, I have observed a spontaneous arterial thrombosis in a young man with an intact vascular system.

Clotting time can be easily determined in any hospital laboratory and may have comparative value, although accurate determinations require the elimination of many factors. The determination of the clotting index according to Bancroft, Stanley-Brown and Quick is capable of detecting potential "clotters" preoperatively. According to their latest report⁴ 12 per cent of all surgical patients have a high clotting index and such patients should be treated with special care. At present, however, the method is not simple enough to warrant its general adoption in all hospitals. The authors advocate the intravenous injection of 10 cc. of 10 per cent sodium thiosulphate for three successive days. When the clotting index remains high the series may be repeated.

I have no experience with the clotting index; the sodium thiosulphate injections, however, have given remarkable results in cases of migrating phlebitis with segmental thromboses. The mechanism of this effect is far from being clear.

Slowing of venous return. The drainage of venous blood from the lower extremities and pelvis is measurably retarded after operations. Factors responsible for this are: 1. fall in arterial pressure, 2. decreased diaphragmatic excursions which greatly influence the emptying of the vena cava, 3. increased intra-abdominal pressure owing to distention and tight dressings, and 4. Fowler's position which creates a venous pool in the pelvis. When arterial pressure is maintained, ventilation encouraged with sufficient

postoperative sedative, postoperative atony relieved with prostigmin or acetylcholine, tight dressings not tolerated and the Fowler's position possibly eliminated by a moderate Trendelenburg position for the first 48 hours, we have done much to encourage venous return. Of course the most potent stimulus for venous backflow is active muscular movement and the patient should be encouraged to do this from the third day on until he or she is ready to get up. Thyroid extract given to speed up circulation has not prevented thromboses. Prolonged immobilization, such as becomes unavoidable in very sick patients or following certain fractures, always carries a higher incidence of thrombosis and embolism.

In case of a suspected or manifest thrombosis the exercises are naturally stopped. There seems to be no reason, however, to discontinue the elevation of the foot of the bed; better drainage should diminish the incidence of thrombi propagating from the site of venous occlusion.

The meteorologic factor. Recently Mayne, Petersen and I⁵ correlated the occurrence of 100 cases of pulmonary embolism with meteorologic charts and with fluctuations of environmental temperatures. While it is obvious that many other predisposing and precipitating factors are known to operate in cases of embolism, the weather factor is one which readily lends itself to registration. During the spring and fall periods, which showed marked barometric and thermal fluctuations, actually more emboli occurred and the summer months were comparatively exempt. The effect of marked deviations from the mean temperatures for any particular period also seemed to bear influence on the mobilization of blood clots. While this study was primarily undertaken to study the influence of weather on embolism, the effect on the thrombosis preceding it is equally unmistakable.

It seems as if thrombosis and embolism would be much less frequent in the South than in the North.³ At present we cannot free our patients from the effects of the weather; however, one can diminish the bodily reactions to the weather by sedatives and antispasmodics, the role of which will be discussed later.

THE EARLY RECOGNITION OF POSTOPERATIVE THROMBOSIS

The classic description of pain in the groin, marked livid and later pallid swelling of the

limb with a rise in temperature and pulse rate need not be repeated here. More important are early premonitory symptoms which may later be followed by the manifest thrombosis or remain latent abortive types of phlebitides. This group of patients is more endangered by embolism than those in which a large "milk leg" has appeared. In fact it has been my experience as well as that of others that once a milk leg has appeared the danger of embolism is slight.

A small rise in the evening temperature, a persistently elevated pulse rate without any detectable cause should cause one to look around after the fourth to fifth postoperative day for other signs and symptoms of latent thrombosis. These are 1. an elevation of skin temperature of the sole of the foot on the affected side, 2. pain on pressure in the sole of the foot, in the calf muscles, in the popliteal space on dorsiflexion of the foot, or in the groin, 3. a slight edema of the groin or suprapubic region, 4. frequent urination or mucous stools, and 5. pain in the small of the back. The three last symptoms are suggestive of pelvic thrombosis, while the location of pressure pain often denotes the site of the original thrombus which, if it remains localized, may not progress to a manifest thrombosis.

There are, however, postoperative blood clots in which even these premonitory signs and symptoms are missing. The patient may show a smooth postoperative course with no rise in pulse and temperature, no pain or swelling; most of the fatal pulmonary emboli originate from just such thrombi. Their location is either in the muscle veins of the calf or in the large pelvic plexuses.

THE EARLY TREATMENT OF POSTOPERATIVE THROMBOSIS

The objectives of treatment are to free the limb of the edema and to protect the patient as far as possible from propagating thrombosis and embolism. The footend of the bed is elevated six to eight inches on shockblocks. The limb is fomented from toes to groin with warm wet dressings. Heat cradles are dangerous as the edematous limb blisters very easily and may even lead to gangrene. If a heat cradle is used it is better to apply it to the groin and over the abdomen. If the limb is cold and the toes quite pallid, a block of the lumbar sympathetics may be performed with procaine which abolishes reflex vessel spasm. The average case, however,

will respond to a reflex heat from an abdominal cradle. Liquids are restricted to 1000 cubic centimeters for a few days and a salt poor diet is prescribed. Both of these measures help to prevent retention of fluid in the affected limb. While further dehydration may be accomplished with mercurial diuretics, which I have previously advocated, it should be remembered that too much dehydration may result in hemoconcentration. Thus while edema is then diminished the tendency to ascending thrombosis is facilitated. It is better then to restrict the use of salyrgan or mercuprin to patients in whom daily blood counts and coagulation times are available.

Under such conditions edema usually subsides within a few days. The important problem then is to prevent embolism if possible. With the use of intravenous heparin, as described by Murray and Best,⁶ the clotting time can be lengthened to three times its normal value. If this medication is maintained for about two weeks the formation of new thrombi, which constitute the real source of embolism, can be inhibited. This is particularly striking in patients who have had recurrent pulmonary infarcts, as recently seen in a patient with Dr. Joseph T. Gault.

Because of the expense of obtaining purified heparin other anticoagulants may be used. Leeches may occasionally lengthen coagulation time but their use is cumbersome and unless kept up continuously embolism will occur a few days after they are discontinued. This happened in a patient suffering from polycythemia who died of pulmonary embolism on the sixth day following amputation. Leeches were used the first two days after operation.

In patients who exhibit marked periphlebitic reactions characterized by high temperature, leucocytosis and inflammatory edema, the value of x-ray treatment has been unquestionable. This treatment should be given in the typical iliofemoral phlebitis over Scarpa's triangle and the lumbar paravertebral space on the affected side. When the phlebitis occurs in the saphenous vein with distinct periphlebitic red streaks, the results of x-ray treatment are demonstrable to the naked eye. The effect of Roentgen rays is not on the clot itself but on the lymphocytic infiltration in the adventitia, which in turn is responsible for most of the reflex vascular spasm and pain occurring in phlebitis. The more acute the process, the smaller the dose; 80-100 Roent-

gen units with a heavy filter should not be exceeded. The results in the subacute and chronic cases are not so striking and the doses have to be increased. The treatment had best be repeated three times in ten day intervals. Whether it helps to organize the clot faster is not known.

When a thrombus is readily localizable and one or two pulmonary infarcts have occurred, the ligation of the vein proximal to the thrombus is advisable. The thromboses of the muscle veins and the popliteal vein as shown by Homans are especially apt to give rise to embolism. In such patients the femoral vein can be tied below the profunda without producing persistent swelling.* When the thrombus is in the iliofemoral vein the clot can be extracted through the saphenous vein opened at the saphenofemoral junction.² In amputations for peripheral vascular disease the popliteal vein is often thrombosed or forms a postoperative clot ascending from the site of ligation. Veal⁷ has suggested the prophylactic ligation of the femoral vein distal to the saphenous vein but above the profunda. We have recently tied this vein during an amputation at the kneejoint with no residual swelling of the stump. Finally in a septic phlebitis of the leg or pelvic veins a ligation proximal to the septic thrombi may be followed by a sudden defervescence and prompt recovery.

THE PERIOD OF IMMOBILIZATION FOLLOWING THROMBOSIS

As long as the edema is marked and the patient is febrile bedrest in the Trendelenburg position is maintained. Patients with saphenous phlebitis need not be immobilized for any length of time but may get up early with adequate elastic support. The phlebitis of deep veins, however, needs longer rest. It has been our procedure to keep the patient in bed for ten days after the evening pulse has returned to its level which is normal for the individual. Then the patient is allowed to sit up, hang his feet over the bed, and perform a few flat-foot exercises for five minutes three times a day. This sometimes results in an elevation of temperature or pulse on the night of the exercise, which suggests further immobilization. However, if no reaction ensues, an Unna's glycerine-gelatin cast is ap-

plied from the toes to the groin, which is worn for three weeks and then reapplied for another three weeks. Thus many of the late sequelae of deep thrombophlebitis may be avoided.

THE LATE SEQUELAE OF POSTOPERATIVE THROMBOSIS

The hard brawny induration following deep thrombophlebitis is known to all of you. It may be prevented to a great degree by the early measures discussed in the previous paragraph. When seen late gelatin-glycerin casts give a certain comfort, but when discontinued the hard, sometimes woody induration, recurs. The same is true of iontophoresis, a method whereby vasodilators or sodium chloride are introduced through the skin with a galvanic current. Our clinic has given an extensive trial to this method and smaller indurations do respond with softening after 20 to 30 treatments; however permanent softening can seldom be accomplished. Removal of foci of infection helps to diminish the incidence of a patchy type of acute recurrent induration which leaves the patient with more and more edema and often leads to ulceration. In the treatment of such thrombophlebitic ulcerations it is again the hard fibrotic mass around the ulcer which needs to be treated, as the ulcer itself, once the induration is overcome, readily responds to treatment with gelatin casts.

The thrombophlebitic indurations may vary from the size of a silver dollar to areas encircling the entire circumference of the calf. They throttle their own blood supply, produce swelling of the foot distal to the constriction and break down easily in the center. When a stage of recurrent ulcerations has been reached the condition should be regarded as a major surgical problem. Excision of the entire area together with the underlying fascia and a skin graft immediately or a week later has often been successful. Much attention should be paid to the recent suggestion of Bancroft⁸ who makes two longitudinal incisions down to the fascia, undermines and lifts up the entire area without excising it and later covers the remaining skin defects with pinch grafts. Prolonged elastic compression lasting six months to a year must follow this procedure in order to obtain satisfactory results.

PRECIPITATING FACTORS OF PULMONARY EMBOLISM

There is of course no pulmonary embolism

*In a recent case of recurrent pulmonary embolism, the femoral vein was tied below the profunda, the clot aspirated from the proximal stump and the patient was hyperinized. 3 months later he had no residual swelling.

without a preexisting thrombosis and yet the point should be made that in the majority of cases the primary source of the embolus, at least at the time of its occurrence, is unknown. The thrombus which is most apt to break loose comes from large tributaries of the femoral or iliac vein but produces hardly any clinical symptoms as it does not occlude the main vessel. However, when these thrombi from the periprostatic, perivesical, uterine veins or from the muscle veins of the calf and the popliteal space extend into the main swift current and propagate centrally, the loose, red thrombus, the tail of the clot, which is hardly fixed to the wall, breaks loose very readily. In tabulating the factors responsible for the mobilization of the clot Jesser and I have recently reported that in 30 per cent of our cases some definite immediate cause such as bowel movement, active or passive physical exertion, the milking action of a large enema, sitting up out of bed for the first time, and reverse gastrointestinal peristalsis seem to have precipitated the embolus. In 70 out of 100 cases, however, no obvious precipitating factor could be found. Mayne, Petersen and I⁵ have studied the possible influence of the weather on the appearance of embolic showers and reference was made to an unmistakable correlation here with barometric pressures and changes of temperature in a previous paragraph.

THE EARLY DIAGNOSIS OF PULMONARY EMBOLISM

Many small emboli go unnoticed. Proof of this is frequent finding of emboli in the lung in patients whose clinical symptoms were not suggestive. A small stitch in the side followed by a mild dry or exudative pleurisy, a short retrosternal attack of pain, or a few minutes of dyspnea followed by a feeling of lassitude should make the surgeon suspicious of embolism. Further showers of greater magnitude and importance may follow.

In taking the nurses' records from St. Luke's and the Research and Education Hospitals one finds that the three leading symptoms are dyspnea, cyanosis and chest pain. The fall in blood pressure, which was not recorded except in the last few years, is suggested by notes such as "weak pulse," "rapid pulse," and "restlessness." Abdominal symptoms, such as pain in the epigastrium, pain in the right upper quadrant or shoulder pain often suggest intra-abdominal lesions, notably a gall bladder colic. This latter

syndrome usually signifies an infarct in the right lower lobe with diaphragmatic irritation. Cerebral anemia due to the fall in blood pressure and the loss of oxygen from the blood is signified by "convulsions" or "dizziness."

The nurses' observations and records are extremely valuable as they allow the institution of simple but sometimes life-saving measures. Contrary to the customary comment, that patients either die before anything can be done or recover anyway, it can be shown in our study of 70 fatal emboli that only 8.5 per cent died in less than ten minutes, roughly 60 per cent lived more than one hour and 34 per cent lived from one to several days. There is certainly time then to institute simple, emergency measures, most of which can at least be started by the nursing staff.

THE EMERGENCY TREATMENT OF PULMONARY

EMBOLISM

The question naturally arises: what can one possibly accomplish in patients whose pulmonary artery is plugged? When cyanosis and dyspnea are the predominant symptoms, oxygen by nasal catheter, or preferably in 100 per cent concentration with the new B. L. B. mask, is logical. At St. Luke's Hospital every surgical floor is equipped with an oxygen tank together with an inexpensive, nondeteriorating, cellulose-acetate mask which can be applied within a few minutes until the more permanent equipment arrives. Members of the medical staff and the administration have been instrumental in constructing this emergency outfit. The massive pulmonary embolism, however, is often characterized by pallor, retrosternal pain and fall in blood pressure; its differentiation from a coronary occlusion is quite difficult. As Arlie Barnes so aptly pointed out, it is necessary to avoid the obsession that cyanosis and dyspnea are the cardinal signs of pulmonary embolism.⁹

Some of the older clinicians, notably the French Roger, have made a distinction between the asphyctic and the syncopal type of embolism. The latter type closely simulates coronary occlusion. Here asphyxia is not a dominating symptom but oxygen is still useful for the dyspnea and the chest pain just as in coronary occlusions. The electrocardiogram does not well differentiate this type of embolism from coronary occlusion. In fact, some of our animal experiments interpreted by Dr. K. G. Fenn¹⁰ would indicate that an acute coronary insufficiency exists in

these patients. Pulmonary embolism undoubtedly causes a diminution of coronary flow: 1. by the fall in the systemic pressure, 2. the dilatation of the right heart, which greatly interferes with coronary flow and 3. by vagal inhibition of the heart resulting in typical nodal rhythm, partial heart block or even standstill. These effects can all be reversed in the experimental animal with atropin.

Atropin also inhibits vagal reflexes originating from the site of pulmonary arterial obstruction and constricting the bronchi or producing gastro-intestinal spasms. As these smooth muscle spasms may greatly contribute to the causes of death, we have advocated, as originally suggested by Denk,¹¹ the addition of papaverine to the emergency measures. Papaverine relieves the pain, relaxes the bronchial spasm and offers the necessary sedation which these patients need. Whether it actually relieves the spasm of the pulmonary arterial tree is still unsettled and is now being investigated.*

The emergency treatment of pulmonary embolism then is carried out as follows: as soon as the nurses observe any of the cardinal symptoms discussed above, oxygen is started with the emergency mask and the permanent equipment is called for. Atropin gr. 1/60 to 1/75th is given subcutaneously and the interne staff notified. On the arrival of the interne, which at night in a large hospital may well take ten to twenty minutes, papaverine gr. 1/2 is given intravenously and the atropin gr. 1/75 may be repeated intravenously if no marked flushing and dilatation of the pupil exist. Both atropin and papaverine are on the surgical floor, the former in tablets and the latter in powder form; they are dissolved in sterile water or salt solution, boiled over the flame in a spoon and injected. Ampules are not always reliable in regard to their potency.

The results of this emergency treatment are sometimes dramatic. The moribund, pulseless patient may regain his color, his blood pressure rises, and his heart action improves. From then on, however, constant watch has to be kept for recurrence of attacks or relapse into the previous state. Oxygen can be kept on continuously for

two to three days; papaverine and atropin can be repeated every four hours for several days until the patient's condition has decidedly improved.

It is not to be expected that every case will respond to this treatment. When the main pulmonary artery is completely plugged and some of the elots even get stuck and obstruct the origin of the artery in the right heart, the patient must die of asphyxia, failure of the right heart and lack of venous return to the left heart. There are enough post-mortem records to indicate, however, — and we have published eight of these — that patients may die from a comparatively small embolus obstructing only one lobe or part of one lobe of the lung. In the absence of other detectable causes of death reflex effects on the heart must be responsible, and it is against these that this emergency treatment is directed.

At present Dr. Fenn and I are engaged in the gathering of statistical data to study the mortality of the attack when such treatment is used. As a control we have one hundred cases of massive pulmonary embolism (not counting small infarcts) of which eighty-seven died. While our treated series is much smaller, the beneficial effect of treatment is unmistakable.

Mention should be made of the fact that if the diagnosis of pulmonary embolism is incorrect and a coronary occlusion, an acute pulmonary edema, or a cerebrovascular accident should be present, the treatment not only does no harm but is definitely beneficial. The use of morphine, digitalis and epinephrine is not recommended as they either sensitize the vagus or, in the case of epinephrine, favor pulmonary edema.

The Delayed Treatment of Pulmonary Embolism. There is a group of cases in which the patient rallies from the initial attack and then relapses again into a state of cyanosis, low blood pressure and failing right heart. These patients are not in a moribund state but are slowly failing. It may take them several hours or days to die. For this type of slowly fatal pulmonary embolism Pileher has recommended embolectomy and I am thoroughly in accord with this indication. The successful removal of the embolus has only been possible in nine cases out 132 attempts, a mortality of 93.2 per cent. It should be pointed out, however, that these embolectomies were all performed in the rapidly fatal

*We have recently conducted some animal-experiments with Tesser and visualized the pulmonary artery during its embolic obstruction (Contr. Soc. of Clin. Research Nov. 2, 1940). Papaverine has an unmistakable effect on the pulmonary vascular bed of the dog.

cases in a moribund state. The patients, who are not moribund but just show no improvement need continuous watching with a sterile surgical set-up. Under local anesthesia the pericardium may be exposed and the flap turned back; if the patient improves, the flap can always be resutured. So far our service has carefully watched two such patients but both finally emerged from the attack without the necessity of surgical intervention.

In cases of recurrent infarcts another surgical procedure may be considered. If the patient survives one pulmonary embolus, he has, according to our figures, a 40 per cent chance of getting another one; if he survives the second one, he has a 12 per cent chance of having more of them. As a few patients have been lost as a consequence of these second or third attacks some method of preventing further emboli seems indicated. If the clot is recognizable in the calf muscles or in a lower part of the femoral vein, the ligation of the vein proximal to the clot below the profunda or below the saphenous may be done with hardly any residual edema. Homans¹² and recently Veal⁷ have emphasized the value of these ligatures. Indeed as the femoral vein is so often thrombosed during or shortly after an amputation, Veal's preventive high ligation seems reasonable. The last patient on whom amputation was done without this preventive ligature died of pulmonary embolism.

A second possibility in case of recurrent iliofemoral thrombosis is to extract the clot through an opening of the saphenous vein. I have recently published such a case. There is no objection of tying even the common iliac vein for thrombi coming from pelvic thromboses but this procedure should be limited to septic thrombophlebitides in which dramatic cures have occasionally been reported.

SUMMARY

Three factors predisposing to postoperative thrombosis have been discussed, namely: hemoconcentration, the slowing of venous return and meteorologic influences. Preventive measures are possible against the first two of these factors. The early signs and symptoms are described together with the early treatment, the objectives of which are the freeing of the limb from postoperative edema and the protection of the patient from propagating thrombosis and embolism. The necessary period of immobilization

following thrombosis has been defined. The treatment of late sequelae of deep thrombophlebitis has been discussed. In regard to embolism, the factors precipitating it, the early diagnosis and the early treatment have been stressed. Attention has been called to reflex nervous mechanisms, the inhibition of which may be life-saving. The treatment of the slowly fatal embolus and that of recurrent embolizations has been described. While thromboses and emboli are unavoidable their early recognition and treatment may diminish mortality and morbidity.

BIBLIOGRAPHY

1. Burke, M.: Thrombosis: a Medical Problem., *Am. J. Med. Sc.* 196: 796, 1938.
2. de Takats, G. and Jesser, J. H.: Pulmonary Embolism. Suggestion for its Diagnosis, Prevention and Management., *J. A. M. A.* 114: 1415, 1940.
3. Ochsner, A. and DeBakey, M.: Therapy and Phlebotrombosis and Thrombophlebitis., *Arch. Surg.*, 40: 208, 1940.
4. Bancroft, F. W., Stanley-Brown, M. and Quick, A. J.: Postoperative Thrombosis and Embolism., *Am. J. Surg.*, 28: 648, 1935.
5. de Takats, G., Mayne, A., and Peterson, W. F.: The Meteorologic factor in Pulmonary Embolism., *Surg. In Press.*
6. Murray, D. W. G. and Best, C. H.: Heparin and Thrombosis; the Present Situation., *J. A. M. A.* 110: 118, 1938.
7. Veal, J. R.: High Ligation of the Femoral Vein in Amputations of the Lower Extremities., *J. A. M. A.* 114: 1616, 1940.
8. Bancroft, F. W., Stanley-Brown, M. and Taylor, R. I.: Modified Kondoleon Operation for Sclerosed Leg with Ulceration., *Ann. Surg.* 111: 874, 1940.
9. Barnes, A. R.: Pulmonary Embolism., *J. A. M. A.* 109: 1347, 1937.
10. de Takats, G., Beck, W. and Fenn, K. G.: Pulmonary Embolism., *Surg.* 6: 339, 1939.
11. Denk, W.: Zur Behandlung der arteriellen Embolie., *Munch. med. Wochschr.* 81: 437, 1938.
12. Homans, J.: Venous Thrombosis in the lower Limbs: its Relation to Pulmonary Embolism., *Am. J. Surg.* 38: 316, 1937.

Dr. Michael Mason, Chicago: I am very happy to have heard this paper but I am a little embarrassed at having to discuss it. He has done so much work on vascular surgery and in this field particularly that I cannot add anything to what he has said. I think this is an extremely valuable and timely contribution. Dr. deTakats has presented a very common sense approach to the problem of postoperative thrombosis and embolism and has outlined methods of prevention and treatment. He has mentioned a number of factors that may predispose to the formation of thrombi and the release of emboli. Cutler has emphasized for years the significance of operative trauma, and points out that the one thing common to postoperative accidents of this type is the operative trauma and a surgical wound. In many instances thrombosis develops in areas not the site of the original operation. I think it is of significance, however, in this connection, since Dr. deTakats' figures show that well over 60 per cent of cases of thrombosis occur following pelvic operations; that is, operations upon the

female genitalia, or the prostate. This certainly suggests that operative trauma in the neighborhood of the large pelvic plexus of veins must be of significance.

I am glad that he emphasized the conservative management of the thrombophlebitis associated with febrile reaction. He has also mentioned many helpful things that can be done once a pulmonary embolus has occurred. We should all be encouraged by his experiences which show that the outlook is not so dark as we have assumed it to be. I think the statistics he has shown, even though, as he admits, the series is small, demonstrate the effectiveness of his treatment and substantiate the logic of his arguments.

PROGRESS REPORT ON PNEUMONIA CONTROL IN ILLINOIS

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Each year in Illinois between 10,000 and 14,000 cases of pneumonia are reported and from 5,000 to 8,000 deaths have been attributed to that disease annually in the past in ordinary years. Although this seems to reveal a fatality rate ranging from 35 per cent to 45 per cent, it must be remembered that the cases reported include pneumonias of all types and etiology. For the purpose of studying the pneumonia problem with the end in view of reducing the high mortality and high fatality rate, a state-wide pneumonia control program was inaugurated by the State Department of Public Health late in 1938.

The development of this program reached the point in January 1939 where it was practicable to begin the free distribution of antipneumococcic serum for the treatment of patients with pneumococcic pneumonia and to offer diagnostic laboratory typing service on a free or pay basis,

Note: An advisory council on pneumonia, composed of O. H. Robertson, M.D., Chairman; M. H. Barker, M.D.; H. D. Countryman, M.D.; H. A. Durkin, M.D.; F. H. Hick, M.D.; E. E. Irons, M.D.; P. S. Rhoads, M.D.; and Italo F. Volini, M.D., has rendered very valuable service in connection with planning and executing the program from the outset.

The Illinois Department of Public Health and the Advisory Council of the Pneumonia Control Program wish to take this opportunity of expressing their appreciation to all the physicians of Illinois who have so whole-heartedly cooperated with this program. Without their help it would have been impossible not only in markedly reducing the pneumonia death rate but also in gathering this wealth of statistical material. The above report is only a preliminary statement. As soon as the analysis is completed it will be made available and published in suitable form.

depending on whether public or private laboratory facilities were used. During November and December, 1938, there had been established 25 approved laboratory typing stations and 10 serum distributing centers at various points in the State. Horse serum for types I, II, V, VII, VI and VIII was dispensed, and in addition, small quantities of rabbit serum for types III and IX and higher numbered types were provided for experimental purposes.

At the end of the first six months an analysis was made of the results of the program. The approved laboratories had then reported 2,171 positive pneumococcus typings, of which number 1,016 received antipneumococcic serum provided by the State Department of Public Health. The average gross mortality of these serum-treated cases was 14.1%. (See Table 1.)

Table 1. January through June, 1939.

Type	No. Cases	Deaths	Per Cent.
I	385	54	14.0
II	175	28	16.0
III	55	12	21.8
IV	60	7	11.7
V	44	6	13.6
VI	3	1	33.3
VII	143	19	13.3
VIII	93	8	8.6
IX & above	58	9	15.5
Total	1,016	144	14.1

Beginning July 1, 1939, the State Department of Public Health decided to distribute antipneumococcic rabbit serum for all types of pneumococcic pneumonia. By doing so it not only made therapeutic material available for the large number of higher types which were being reported, but also it was hoped that this would provide a stimulus for more careful and complete laboratory work.

Within the next few months, sulfapyridine proved both its effectiveness in pneumonia therapy and its relative safety if given under careful medical supervision. Therefore, by December, 1939, sulfapyridine as well as antipneumococcic serum was made available free by the State Department of Public Health on requests of physicians to all pneumonia patients whose sputa were typed in approved laboratories. An average dosage of thirty grams of sulfapyridine was allowed for each patient, while the amount of serum allowed depended entirely on the judgment of individual physicians.

Between July 1, 1939 and April 1, 1940 a total of 12,010 laboratory examinations was made on specimens taken from patients with

pneumonia or suspected pneumonia. The amount of typing done during the second season was five times greater than that in the first season. Of these 12,010 examinations, 5,436 were positive for pneumococci. (See Table 2.)

Table 2. Total Number of Tests for Typings.
July 1939 to May 1940

Type	Number	Type	Number
I	876	XVII	93
II	444	XVIII	111
III	845	XIX	231
IV	252	XX	106
V	146	XXI	38
VI	248	XXII	50
VII	414	XXIII	85
VIII	358	XXIV	59
IX	73	XXV	18
X	74	XXVI	1
XI	90	XXVII	25
XII	37	XXVIII	47
XIII	70	XXIX	68
XIV	173	XXXI	39
XV	66	XXXII	14
XVI	81	XXXIII	20
		Unclassified	184
Total Positive Typings	5436		
Total Negative Results	6574		
Total Laboratory Exam.	12010		

At the present time (July 1, 1940), 175 approved pneumonia typing laboratories are functioning and serum and sulfapyridine are being distributed from 27 centers throughout the State.

Anti-serum or sulfapyridine or both was provided by the State Department of Public Health on requests from physicians for approximately 5,200 pneumonia patients between July 1, 1939 and July 1, 1940. Available for this paper are complete reports on 4,158 of these treated cases which show a total mortality of 7.7%. (Mortality figures are shown according to type in Table III.) Most common in this series is type I with

730 cases and a mortality of 5.3%. Type III ranks second with 592 cases and a mortality of 12.1%. The lowest mortality of any group in this series involving as many as 100 patients was observed in type XIV with 168 cases and 5 deaths, a matter of 2.9%.

Since sulfapyridine was made available, only 270 pneumonia patients among those treated with therapeutics provided by the State Department of Public Health have been treated with antipneumococcic serum alone. (See Table 4.) Among these 270 there were 39 deaths, a mortality of 14.4%. Sulfapyridine alone was given to 1,573 patients. Among these there were 51 deaths or 3.2%. Of the 2,315 patients who received both serum and sulfapyridine there were 236 deaths or 10.1%.

Table 3. Specifically Treated Cases
Serum and Sulfapyridine
July 1, 1939 to July 1, 1940

Type	No. Cases	No. Deaths	% Deaths
I	730	39	5.3
II	367	36	9.8
III	592	72	12.1
IV	172	10	5.8
V	172	10	5.8
VI	190	8	4.2
VII	315	18	5.7
VIII	264	18	6.7
IX	70	6	7.1
X	45	10	22.2
XI	64	7	11.1
XII	33	0	0.0
XIII	48	5	10.4
XIV	168	5	2.9
XV	44	4	9.0
XIX	149	16	10.0
XVI & over	735	62	8.4
TOTAL	4158	326	7.7

Table 4. Specifically Treated Cases
July 1, 1939 to July 1, 1940

Type	SERUM			SULFAPYRIDINE			SERUM & SULFAPYRIDINE		
	Recoveries	Deaths	%	Recoveries	Deaths	%	Recoveries	Deaths	%
1	49	4	7.5	178	5	2.7	464	30	6.4
2	22	5	18.5	113	11	8.8	196	20	9.2
3	20	3	13.0	151	7	4.4	349	62	15.0
4	16	2	11.1	63	0	0.0	83	8	8.7
5	18	1	5.2	63	0	0.0	81	9	10.0
6	8	2	20.0	112	0	0.0	62	6	8.8
7	19	1	5.0	116	3	2.5	162	14	7.9
8	19	4	17.3	68	3	4.2	159	11	6.4
9	3	1	25.0	32	1	3.0	29	4	12.1
10	3	0	0.0	11	3	21.4	21	7	25.0
11	3	0	0.0	22	3	12.0	32	4	11.1
12	1	0	0.0	18	0	0.0	14	0	0.0
13	2	1	33.3	26	0	0.0	15	4	21.0
14	11	1	8.3	93	3	3.1	59	1	1.6
15	0	0	0.0	27	1	3.5	13	3	18.7
19	7	4	36.3	58	1	1.6	68	11	13.9
16 & over	30	10	25.0	371	10	2.6	272	42	13.3
TOTAL	231	39	14.4	1522	51	3.2	2079	236	10.1

It is doubtful whether the last two mortality figures give an entirely valid basis on which to draw conclusions. At present it is not known whether the combination of serum and sulfapyridine was given to unselected cases or only to those most severely ill. In other words, these figures may be critically altered when the case analyses answer the following questions: 1. Which age groups received both serum and sulfapyridine? 2. If sulfapyridine failed to produce the desired results was serum used as the final resort? 3. How ill and what complications were present in patients receiving combination therapy? All these factors must be considered before drawing any conclusions from the figures as they appear in this preliminary report.

From July 1939 to May 1940 of the 1,147 typed cases of pneumonia that received sulfapyridine alone, a comparative mortality study was made according to the amount of drug used in the treatment of individual patients. (See Table 5.) Unfortunately, not enough blood sulfapyridine studies were made by the general practitioners to be of any statistical value. It is interesting to note, however, that even with theoretically inadequate amounts of sulfapyridine the gross mortality was less than 5%.

Table 5			
Gms. per case	No. Cases	Deaths	Per cent.
0 - 4	139	6	4.3
5 - 9	315	14	4.4
10 - 15	233	4	1.7
16 - 20	152	8	5.2
21 - 25	104	2	1.8
26 & over	140	2	1.4
Total	1083	36	3.3

It should be noted here that among 91 patients in whom pneumococci were present but could not be typed, there were 13 deaths or fatality rate of 14.2%. All of these patients received sulfapyridine. This seems to be a strong argument in favor of the importance of establishing the type for specific etiological diagnosis.

Regardless of the therapy used, the mortality figures in pneumonia patients over 60 years of age still remain high. For example, in 66 type I cases over 60 years of age there were 15 deaths or a mortality of 23.0%. In 225 cases of type III over 60 years of age there were 48 deaths or a 21.3% mortality. (See Tables 6 and 7.) These figures include all pneumonias, both lobar and broncho, in which pneumococci were typed from the sputum.

Table 6. Type I. 730 Specifically Treated Cases — 39 Deaths — 5.3%

Age	No. Cases		Died	Recvd.	% Deaths
0 - 2	15		0	15	0.0
2 - 19	217		2	215	0.9
20 - 39	254		5	249	1.9
40 - 59	178		17	161	9.5
60 & over	66		15	51	23.0
TOTAL	730		39	691	5.3

Age	Serum Only		Sulfapyridine Only		Serum & Sulfapyridine	
	R	D	R	D	R	D
0 - 2	2	0	5	0	8	0
2 - 19	18	0	72	0	125	2
20 - 39	16	0	52	0	181	5
40 - 59	8	3	41	2	112	12
60 & over ...	5	1	8	3	38	11
TOTAL	49	4	178	5	464	30
%	7.5		2.7		6.4	

Table 7. Type 3. 592 Specifically Treated Cases — 72 Deaths — 12.1%

Age	No. Cases		Died	Recvd.	% Deaths
0 - 2	16		1	15	6.2
2 - 19	52		0	52	0.0
20 - 39	76		1	75	1.3
40 - 59	223		22	201	9.8
60 & over	225		48	177	21.3
TOTAL	592		72	520	12.1

Age	Serum Only		Sulfapyridine Only		Serum & Sulfapyridine	
	R	D	R	D	R	D
0 - 2	1	0	8	0	6	1
2 - 19	0	0	24	0	29	0
20 - 39	3	0	24	0	48	1
40 - 59	6	0	43	2	151	21
60 & over ...	10	3	52	5	115	39
TOTAL	20	3	151	7	349	62
%	13.0		4.4		15.0	

It must be stressed here that the average fatality rate of 7.7% represents the experience only of pneumonia patients who were treated with serum and sulfapyridine distributed free by the State Department of Public Health. This rate applied by no means to the general fatality rate from pneumonia of all kinds in Illinois. However, even these latter statistics reveal a general downward trend in both the death and fatality rates from pneumonia. For example, in the first quarter of 1939 (January 1 through March 31) 6,198 pneumonia cases of all forms were reported with 2,030 deaths. During the first quarter of 1940 there were reported 6,759 pneumonia cases of all forms with 1,489 deaths. In other words, although 300 more pneumonia cases were reported there were 500 fewer deaths, a significant drop in the general mortality from pneumonia as well as in the fatality rate. Of course virulency of the organism in the two periods is a factor to be considered.

It is realized that it will take many years of concentrated effort to reduce the general fatality rate from pneumonia, to, say 10%. It is felt, however, that through the pneumonia control

program which has stepped up substantially the employment of the potent therapeutic weapons now available, a noteworthy advancement in the right direction has been made. With the modern methods of pneumonia control which are being further developed almost daily, a goal of 10% fatality or even less, is not too much to expect in the not too far distant future.

SUMMARY

1. During the first six months — January through June, 1939 — of the Illinois Pneumonia Control Program, 1,016 patients, diagnosed for type, were treated with antipneumococcic horse serum distributed free by the State Department of Public Health. The mortality in this group was 14.1%.

2. Both sulfapyridine and antipneumococcic rabbit serum for all types have been distributed since the beginning of 1940. The number of typings performed during the second season of the pneumonia control program was five times greater than in the first. In the second season, July 1939 — May 1940, a total of 5,436 patients were treated with therapeutics provided by the State Department of Public Health. Among these, 4,158 on whom detailed reports are available for this paper, 326 died, a mortality of 7.7%.

3. Although this preliminary study reveals that the lowest mortality occurred among patients who received sulfapyridine alone, other factors — such as severity of the pneumonia in which combination therapy was used, or delay in the use of serum if sulfapyridine failed to give the proper response, — must be considered in evaluating the figures.

4. The mortality figures on patients receiving serum only were slightly lower in the second than in the first season.

5. Very little change in pneumonia fatality rates has been noticed in the age group of 60 years and over, regardless of the kind of therapy used.

6. The mortality from pneumonia in general and the general case fatality rate was significantly lower in Illinois during the first quarter of 1940 than in the first quarter of 1939. Although 300 more cases were reported during the second season, there were 500 less deaths.

7. These data indicate that pneumonia death rates can be controlled, and that if therapeutic methods continue to be as effective in the future

as revealed by this study, a gross mortality rate of 10% or less might be expected within a few years.

CONCLUSIONS

A state-wide pneumonia control program which includes the free distribution of anti-pneumococcic serum of all types along with controlled amounts of sulfapyridine, has proved to be a practical, efficacious, and safe means of lowering mortality from pneumonia in Illinois. Both of these therapeutic agents seem to be easily and well handled by the general practitioner in his treatment of pneumonia patients. It is increasingly evident that a careful etiological and laboratory diagnosis of each pneumonia patient should be made in addition to a careful clinical consideration of the severity of the illness of the patient. Only after the strictest attention has been given to these two factors, can appropriate treatment be instituted.

PROSTATIC ELECTRORESECTION; VIEWS ON PROCEDURES AND URINARY INFECTIONS

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The subject of urinary infection and stasis embraces a tremendous literature, all of which is characterized by various episodes of great activity in scientific and experimental investigation.

The monumental research efforts of certain groups of biochemists, bacteriologists and physiologists through years of intensive study, have given us a dependable bacteriological classification, which in its practical application to infection is noteworthy.

Our former conceptions and individual reactions on urinary infections and sepsis appears quite primitive in the light of modern scientific achievement, and while many earlier theories have been discarded as untenable, yet all have had a definite part in furthering a crystalization of ideas on bacteria and their relations to infection. The medical profession in general, and experimental scientists more specifically, I believe, are to be complimented for an admirable accomplishment in this important field of medicine.

The obvious awakening of urologists in the subject of bacteriology, electrolytic requirements,

fluid exchange and preoperative vaccination against impending infection has materially aided in the advance. The knowledge of dangers attending trauma, aseptic precautions in resectional management and complete resection have reduced urosepsis and mortality to a minimum.

SPECIFIC VIEWS ON PROCEDURES

The candidate intended for resection, not given the advantages of a meticulous bacteriological study of the urine and prostatic secretions may be in a sad plight; it appears to be the better part of valor to be forwarned, assume no chances, and investigate.

We are deeply concerned with the problem of preoperative preparation prior to resection and although in this treatise we are concerned chiefly with urosepsis and pyuria, yet a thorough knowledge of existing modern tendencies and the proper application of sound surgical principles are vital, if resectional success is to be achieved.

Doubtless one of our most sterling urological heritages of the past decade has been the tremendous reduction in prostatic mortality; this has resulted from an accumulation and the utilization of the principles of preoperative preparation. I feel that there is a growing tendency among urologists to accept with small concern the foregoing important observations in the man-

agement of prostatism, transurethrally. The hazards concomitant with resection are manifold and not uncommonly due to flagrant errors in preoperative knowledge, which are avoidable through the medium of intelligent study. Hemorrhage, urosepsis, ascending infection, shock and cardiorenal vascular failure are not infrequently noted, and generally the answer to a vague conception of the uncertainties surrounding resectional procedures.

The almost universal acceptance and general interest in this modern method of prostatic management is sufficient proof of the splendid adaptability to all phases of prostatic hyperplasia.

Considering the fact that the mean age of prostatism is notably increasing, let us be ever-cautious in protecting this excellent procedure against an overambitious urological commercialism and an indiscriminate general application.

The onward march of resection from its inception to our present state of marked precision is a noteworthy accomplishment, unparalleled in the annals of urological history. Well do we remember our earlier trials in resectionally combating the tremendous problems of prostatic obstruction and the adverse criticism so prevalent at that period. Statistical data and personal experiences virtually stamped all urological as-



Figure 1. Grossly hypertrophied prostates are more satisfactorily managed suprapubically.
Weight 410 grams

semblies and specialistic publications. The indiscriminate use of such time honored terms as suprapubic or perineal postatectomy were hastily banished from our nomenclature; as new surgical procedures must be adopted if one intends to maintain his urological standing. The foregoing observations are not submitted in the spirit of criticism, but merely to call to mind the well known fact that any departure from orthodox modes requires an extraordinary appeal and an abundance of clinical and surgical substantiation.

Former disastrous overwhelming tragedies of resectional procedures as streptococci septicemia, urinary extravasation, perivesicle and pelvic cellulitis are now rare entities. Retroperitoneal suppuration and perinephritic abscess, uremic death due to renal insufficiency are now avoidable sequelae in this period of endoscopic exactitude.

It appears, that after a thorough résumé of the literature and considerable correspondence, minute unanimity of thought exists among urologists as to the same extent to which resection should be instituted, except in certain well defined cases.

I have ever been of the opinion that unequivocal preemptory classification of suitable cases, indications and counterindications are without

value and unimpressive, as success depends in a large measure on experience, judgment and a complete evaluation of existing urological findings.

Personally, I believe that this naturally debatable issue will be endlessly before us, and indeed not unlike the fatiguing controversy so long akin between suprapubic and perineal prostatectomy. But notwithstanding, in transurethral surgery we are confronted with a procedure of exacting precision and shocking vicissitudes, and as Cabot has well said, in effect, "For the occasional operator open surgery is a safer attack."

Urologists who have been alert in every new phase of endoscopic refinement and advance, who have a practical knowledge of the intricacies of blood and lymphatic supply, and who possess a natural aptitude for complex and exacting instrumentation will ultimately achieve success.

In accord with the foregoing general reactions on personal judgment, instrumental experience and so forth, case selection and end-results will depend upon a consideration of:

1. An exacting evaluation of bladder neck pathology.
2. Cardiorenal vascular reserve.
3. Blood values and urine constituents.
4. Bacteriological characteristics of urinary

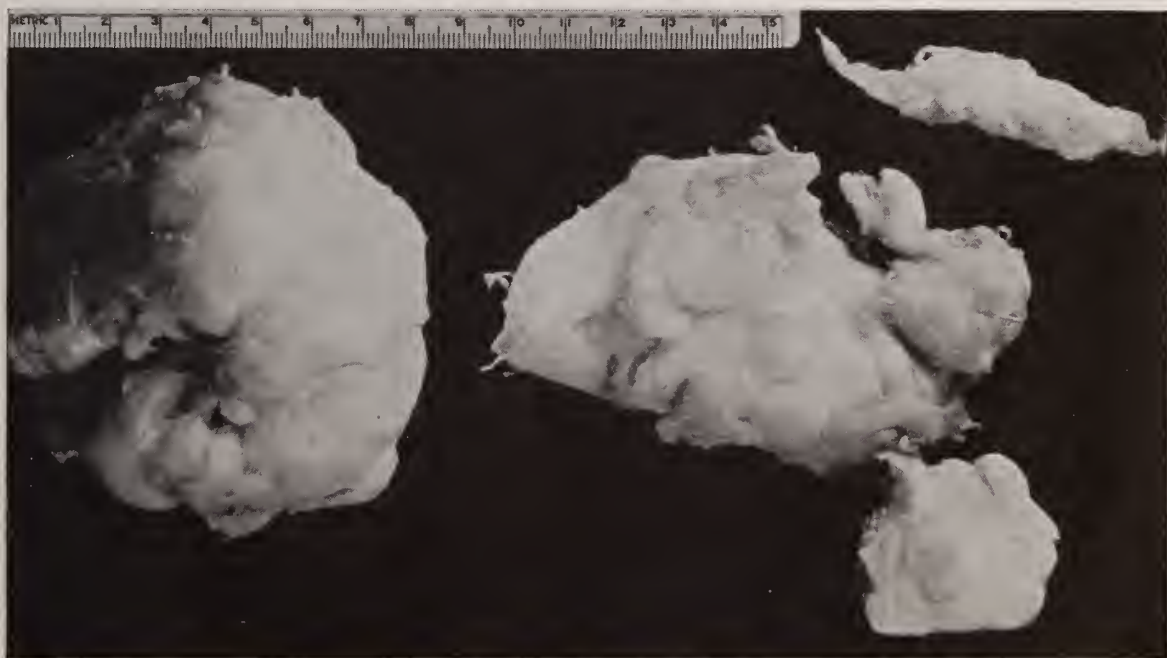


Figure 2. Large intravesicle protrusions with accessory nodular enlargements are with difficulty removed transurethrally.

Weight 418 grams

invasion and infection.

5. Intravenous pyeloureterograms and cystograms as a reasonably reliable aid in ascertaining renal function and bladder morbidity.
6. Electrocardiograms.
7. Urethral fibrosis or occlusion.
8. The degree of urosepsis and pyuria.

The cases of resection following suprapubic cystotomy for stone, tumors, diverticulum, and large intravesicle hypertrophy are commonly seen by us, and while we generally reserve the grossly enlarged intravesicle protrusion for enucleation, yet notwithstanding, splendid results have accrued in resection following open surgery, due to improved drainage, relief of stasis, infection and prostatic dehydration.

The tremendously enlarged intravesicle glands have presented many formidable problems for us and frankly our results have not always been encouraging. Multiple resection productive of urosepsis and pyuria due to prostatic remnants, injury to the trigonal muscle with resultant

trigonal sclerosis is not uncommon in these cases. Functional damage to the ureteral orifices with secondary urethral atony and hydronephrosis, urethral fibrosis due to trauma, have been reported and have been seen by us in certain instances.

Generally considered, the advantages of endoscopic resection are impressed upon us in direct ratio with our experiences as resectionists. We have noted with enthusiasm the practically universal indorsement of resection to the almost complete exclusion of open surgery with but few well defined exceptions. The many advantages immeasurably outweigh the disadvantages; surgical shock, hemorrhage, cardiorenal failure and embolism are formidable factors and should be carefully considered in all pre and postoperative investigations. The relative absence of shock and the decreasing mortality rate ($1\frac{1}{2}$ to 4 per cent) are outstanding in resected cases, and when one considers that a vast majority of our prostaties are within the last dregs of the cup, every effort should be furthered to reduce



Figure 3. Massive intraurethral, intravesicle and subtrigonal intrusions severely complicate transurethral surgery.

Weight 392 grams

hospital domicile and eliminate the hazards formerly attending this distressing malady.

I shall merely mention resection as a prophylactic measure to vigorously condemn it. The following statistical review of our own cases uncovered seventeen interesting cases, all of which had been previously operated upon elsewhere and had not arrived at the age of forty-five years. The indications being as follows: four cases were resected for recurrent epididymo-orchitis; six cases for posterior urethral fibrosis, gonorrheal in origin; and the remaining for unrecognized bladder neck pathology, probably recurrent pyelonephritis with persistent pyuria. The foregoing recital rather smacks of ambitious publicity seeking commercialism or incompetency.

I hold no brief for the conscientious discriminate application of endoscopic methods in early adenofibromatous hyperplasia. However, in computing the incidences of this progressively increasing group, careful discretion in diagnosis is paramount, as many are of a mild inflammatory nature, successfully managed by well known palliative measures.

Doubtless, we as resectionists have witnessed the wave of advance and temporary periods of discouragement in endoscopic resection due to, mainly, an acknowledgment of personal limitations, and an inherent desire for perfection, in order to obtain the following necessary objectives; first, a complete restoration of bladder neck function with a minimum of trauma; second, thorough and complete removal of all obstructive tissue; third, prevention of recurrence; fourth, avoid complications; and, finally, insurance of safety in prostatic surgery.

The aforesaid outstanding objectives are not easy of accomplishment, and I feel that much of our present difficulties are due to a lack of knowledge of the anatomy and physiology of the bladder sphincters and prostatic urethra. The margin of safety decreases posteriorly to the internal sphincter due to the proximity of the trigone and ureteral orifices. Resectional removal of subtrigonal protrusions, in our experience, has produced unfortunate happenings due to fibrotic contractions, subtrigonal infection and irreparable functional disturbances. The external sphincter, voluntary in action, and the verumontanum externally, are to be judiciously avoided due to the possibility of excessive hem-

orrhage and postoperative dribbling.

The basis of all success in this department depends solely on our recognition and adherence to the basic laws of anatomy and physiology; we have long been cognizant of the fact that resection is not an easy way out of a difficult problem. Maximum results plus minimum knowledge does not dwell with resection.

URINARY INFECTIONS INCIDENT WITH RESECTION

Urinary infection associated with resectional cases shall be discussed under two general captions: First, the generally accepted mechanical genesis as a predisposing factor; second, the recognition and management of bacterial infection and invasion.

Concerning prostatic surgery in retrospection, regardless of surgical approach, hemorrhage, sepsis and uremia have been the problems of concern, and sepsis, I believe, the chief offender.

In contrast, urosepsis and pyuria in resection presents an entirely different picture than that seen in open surgery due to a failure of adequate drainage, instrumental difficulties and stasis. Hence the importance of a clear conception of instrumental trauma as a predisposing factor in urosepsis, pyuria, pyelonephritis and uremia.

Sepsis a co-chairman in prostatectomy is definitely less formidable in modern resection, due to improved technique and a practical working knowledge of bacteriology and preoperative understanding.

Instrumental causes of urosepsis, quite prevalent in resectional reports, I feel are generally grossly exaggerated. The dire results of indwelling catheters and the numerous reports of stricture formation produce excellent controversial subjects for the literature, but in our experience, is more myth than actuality. In a large experience with endoscopic resection, only in rare instances was witnessed a definite infection of consequence due to indwelling catheters, or strictures resulting from so-called prolonged manipulation; frequent lubrication of the sheath and the use of small indwelling catheters, if you must use retention catheters, will obviate these potentialities.

Postoperatively the use of hemostatic or balloon catheters, while a necessary evil, nevertheless, are unsound surgically; pressure necrosis

plus infection presents a potent cause for bacterial invasion, pyelonephritis and renal insufficiency. All senile hyperplasia, whether adenomatous or fibrous, are infected and a fertile field for bacterial incubation, ill equipped to combat infection and sepsis. Dependable hemostasis during the resection, in addition to mental security, will lessen periods of postoperative drainage, a cause of urinary infection.

Cysto-urethroscopy prior to resection is a matter of routine in our work and its value cannot be overestimated. The urethra is thereby easily calibrated. Moreover, strictures, fibrosis, imbedded urethral calculi and unusual urethral deformities are noted and carefully managed; all of which are hinderances to a perfect resectional result.

Postoperative urethral stricture in most instances was of long standing, unrecognized and a common source of infection unless preoperatively managed. Excessive postoperative urethral dilatation is perilous due to the ease of bacterial invasion resulting in periurethral infiltration, vas deferentitis and epididymo-orchitis. We are convinced that urethral strictures are rather an uncommon complication, or an aftermath of endoscopic procedures; their presence, however, should be investigated before and not after surgery.

Considering the fact that urosepsis and pyuria are important burdens in resection every effort should be employed in their eradication. We have noticed a marked diminution in urosepsis since instituting a rigid course of aseptic measures, before, during and following the procedure. The preliminary introduction of catheters and cystoscopy is given every possible aseptic consideration. The patient is prepared for these early investigations with every aseptic precaution, so that foreign infection will not be added to our already infected host. The newer drainage outfits with heat control, rubber tubing, byways, reservoir bottles and so forth are simple of sterilization. Utilization of these modern systems of irrigations and drainages have been suitable for our cause in diminishing infection. Postresectional drainage is an extremely important factor in resectional results, and every precaution is necessary in order to render it aseptic.

The removal of clots and bits of tissue which so commonly interferes with drainage becomes a

real issue in many cases, and is difficult to overcome in our defense against bacterial introduction. Sterile syringes, evacuators, gloves and sterile drapes are imperative. Competent surgical assistance, and not inexperienced interns with small knowledge of urethral morbidity and mortality, should be available when the occasion merits. The value of a well trained surgical team cannot be overestimated, and in our experience has been the medium through which urosepsis and bladder overdistention have been avoided postoperatively.

Doubtless many of our perplexities in drainage are attributed to faulty insertion of the catheter following resection. The drainage catheter should enter the cavity of the bladder with perfect freedom and not necessitate the use of stilettes or sounds. Unnecessary manipulations, at this period, are dangerous due to the possibility of hemorrhage, and the trauma attending often results in infection. In a thoroughly performed resection, drainage catheters enter without obstruction and a free flow of irrigation is assured.

Hemorrhage, dysuria and incontinence are major factors of concern following resection, and in our experience postoperative bleeding, present and remote, is frequently a troublesome handicap. The necessary absorption of clots is fraught with dangers due to the inevitable occurrence of infection, and in severe cases obstructive changes in the ureters and kidneys. Excessive and prolonged attempts of coagulation in this limited area of great vascularity, results in postoperative hemorrhage due to sloughing, and further, infection due to difficulties attending adequate drainage. The prostate and adnexa in most cases are virtually cesspools of latent infection, and the ease with which systemic infection and urosepsis are produced is often startling — however, not without understanding. The excessive coagulation of tissue and sealing-in of infection is generally followed by bacterial proliferation, vascular and lymphatic absorption and finally varying degrees of systemic involvement. Accordingly our aim and objective is complete removal of all obstructive tissue with a minimum of deep coagulation.

In those very rare cases in which cystotomy was necessary for the control of hemorrhage, we were soon to learn the inadvisability of excessive

use of the coagulation current. Large areas of blanched necrotic tissue, highly favorable for the development of secondary hemorrhage and sepsis, were noted, also the retention of secretions and a patient in severe shock. Hemorrhage, during resection and postoperatively, is still a major complication and while not as prevalent as formerly, is only too frequently a mighty resectional deterrent.

A more accurate knowledge of the ramifications of the chief vascular supply, namely, the inferior vesicle, middle hemorrhoidal, internal pudendal, and urethral vessels, will greatly assist one in the control of bleeding. The depth of tissue removal is a prime factor in obviating the necessity of deep coagulation with its secondary evils, infection and hemorrhage.

The prostatic bed is highly vascular, being virtually surrounded by retroprostatic lymph nodes and vessels, which terminate in the hypogastric and sacral glands. The prostate then lies in a rich lymphatic plexis, all of which render this area susceptible to severe uncontrollable hemorrhage, if inadvertently sectioned or deeply coagulated. Continued experience with resection soon teaches one to differentiate between the prostate and capsule, and fibromatous tissue from adenomatous tissue. With this knowledge, hemorrhage ceases to become a formidable hazard and resection is facilitated with gratifying security.

Upper urinary tract morbidity and infection due to mechanical failures have been seen by all resectionists of experience, and the most prevalent causes, I would classify as follows:

1. Distortion and fibrosis of the internal sphincter.
2. Subtrigonal infection, sclerosis and loss of function.
3. Occlusion, atony and deformity of ureteral orifices due to injury and contraction.
4. Excessive trauma, due to prolonged instrumentation and the failure of preoperative urethral calibration and inspection.
5. Temporary and remote incontinence due to injury of the external sphincter.
6. Redundant remnants of incomplete resection.

The foregoing tabulations are important occurrences in resectional procedures, productive of serious complications, some of which are irreparable and others a prelude to pyelonephritis,

uremia and death.

Devitalization, infarction, and sloughing, the results of incomplete removal of resected tissue are the chief causes of persistent urosepsis and prolonged pyuria. The tissue resected or coagulated must be removed, otherwise, dysuria, frequency and cloudy urine will persist indefinitely.

Former experience with sulfanilimide, mandelic acid, acidification and bacterial lysis and stasis clearly demonstrate their impotency in the presence of mechanical failure attending the removal of obstructive tissue. Chemotherapy proved to be merely a temporary relief, with a prompt reappearance of symptoms as soon as discontinued. We have little faith in urinary antiseptics in the presence of obstructive morbidity.

The adenomatous mass of prostatic tissue is supplied chiefly by the urethral vessels, branches of the internal pudendal, which increase numerically in direct proportion with the prostatic hypertrophy and encroachment — hence, the more advanced the enlargement the more formidable the factors of hemorrhage and sepsis. These vessels ramify from within outward through the substance of the gland and are necessarily cut and sealed during resection. In extensive intra-urethral and intravesicle protrusions, wide areas of tissue removal and coagulation are a necessity to obtain satisfactory functional results and to avoid postoperative sepsis.

The monstrous intravesicle enlargements, with increased vascularity and our inability to completely visualize the inferior aspect transurethraly, are of necessity, managed suprapubically; suprapubic drainage and dehydration, preliminary to resection, notwithstanding.

Our former concept on the hypothesis of infection in all vesicle hyperplasia has been clearly confirmed since a more general application of resection in this field. The liberation of pus pockets during the removal of tissue has been commonly observed by all resectionists. The cutting loop in its excursion through the infected prostatic tissue causes a virtual spouting of a tooth paste-like column of thick pus. Digital pressure per rectum always facilitates the appearance of this interesting phenomenon. The common occurrence of generalized prostatic infection has been a perplexing finding and has impressed us more definitely with the prudence of preoperative elimination of all foci of infection, whenever possible.

Preoperatively, the universal use of chemotherapy, acidification, and bladder decompression, to reduce prostatic engorgement and reduce renal and ureteral stasis, are of value in extensively infected cases. Also, essentially normal blood values should be attained; electro-cardiography and excretion pyelography, as a fairly reasonable estimate of renal function, are routine.

THE INTERPRETATION AND MANAGEMENT OF BACTERIAL INVASION IN RESECTION

Urinary tract infection considered from a general adaptable viewpoint, naturally classifies itself into:

First, urogenous.

Second, ascending and hematogenous.

Urogenous infection antedates the ascending types and is due to contamination and instrumentation, be it either unnecessary catheterization or mechanical failures during resection. Urosepsis in varying degrees of intensity is a frequent complication and of small consequence unless capillaries and lymphatics are invaded, resulting in marked changes, interferences with urinary output, and ascending infection.

Pyuria, a visible expression of pyelonephritis resulting from infection in the prostatic bed, is the cause of more apprehension on the part of the resectionist than the patient. That this complication is rapidly becoming an infrequent occurrence in the experience of most operators is due to a more exact knowledge of the cause or causes.

We have noted in the prolonged cases of cloudy urine, postoperatively, in which sulfanilamide, mandelic acid and acidification were unsuccessful, a cystoscopic examination would usually reveal overhanging infected tissue, a distorted internal sphincter, or a retention diverticulum.

Those cases of pyuria due to incomplete resection in the adenomatous types, have shown the most gratifying results, following resection of prostatic tissue plus the generous use of chemotherapeutic agents for urinary sterilization. Prostatic cases with an abundance of fibrous tissue appear to produce a minimum of postresectional infection, and our early experiences have established the fact, as far as we are concerned, that a transurethral prostatectomy in these cases was not always necessary. We

have seen no logical reasons for altering our former views in this respect.

The massive intravesicle cases due to extensive resection and coagulation have produced most postresectional urosepsis and pyuria. This not always results from faulty technique, but is due to long standing upper urinary tract morbidity, bladder deformity and chronic urethral fibrosis.

We feel that these old prostatitis with advanced changes in the renal architecture, with damage to the secretory excretory functions, should be given the advantage of careful study and hence improve their status prior to operation. Ascending infection in these cases inevitably results in serious and often fatal termination. Resection in this group of hazardous cases, with little cardiorenal vascular reserve, mounting blood values and renal infection, has been a distinct advance in prostatic management. We have noted that a 75 per cent improvement in this class is not infrequently superior to death when open surgery is considered.

CONCERNING SPECIFIC BACTERIAL ENTITIES

With the appearance of sulfanilamide, mandelic acid and acidification it has become an absolute necessity for the urologist to be more bacteriologically conscious than ever before. We have further noted that due to the gratifying results obtained from the use of these antiseptics, bacterial study has become an interesting research for even the busy urological clinician. The case scheduled for urological study has not had a complete check-up, until a dependable laboratory report of the causative organism or organisms is correctly obtained. Nor are the procedures in general use for the determination of bacteria too extensive for routine office procedures. All are familiar with the necessity of sterile precautions in obtaining urine samples for bacteriological study. The urine is centrifuged and the sediment examined for pus, red blood cells and other pathological elements. The cover slip is then removed and the sediment dried, fixed and gram stain used. Bacteria, if present, will be either rod shaped — the bacilli, or round — the cocci. They can be only gram-negative or gram-positive.

Approximately 75 per cent of urinary tract infections are caused by the gram-negative bacillus, *Escherichia coli*. Other gram-negative bacilli which cannot be distinguished from bacillus

coli by the gram stain are *Aerobacter aerogenes* and *pseudomonas* and *proteus* genera. With the exception of the *proteus* group the response of the gram-negative bacilli to mandelic acid therapy is quite satisfactory. If, after a few days of acid therapy, the urine still remains alkaline or the ammoniacal odor of this urea splitting group is detected, *proteus* is present. Naturally cultural methods will differentiate them. However, this is seldom used, as it is time consuming and more elaborate in procedure.

About 20 per cent of the urinary tract infections are caused by cocci, and these, except for the gonococcus, are nearly all gram-negative. By examining the gram smear it is easily determined whether the organism is a staphylococcus occurring in groups, or streptococcus in chains. The micrococcus is also obvious on examination. The most common coccal form found in urinary infections is streptococcus fecalis and it is usually a secondary invader found in the presence of an indwelling catheter. The streptococcus fecalis is gram-positive and, besides occurring in chains, has a distinctive elliptical shape which makes its diagnosis easy. To differentiate them further by cultural methods is again difficult and usually unnecessary. The cocci, with the exception of streptococcus fecalis, respond nicely to sulfanilamide; this must be treated with mandelic acid. The bacilli are treated about equally as well with sulfanilamide or mandelic acid with one big exception, that being the *proteus* group which responds only to sulfanilamide.

Where there is an accompanying or associated prostatitis, sulfanilamide, since it seems to infiltrate the tissues of the prostate, is the drug of choice rather than the topical urinary antiseptic such as mandelic acid. Also in impaired renal function mandelic acid may not be excreted in sufficient concentration by the kidneys to be of benefit in sterilizing the urine. Here again sulfanilamide is indicated.

RESECTIONAL DEATHS

We have found it advisable, in discussing the relative merits of resection and prostatectomy, to be very guarded in our prognostications. Patients must not be lulled into the sense of imaginary security that resection is a minimum procedure, and due to low mortality, disturbing factors never occur. Resectional deaths are infinitely more difficult to explain, especially in

that class of early prostatics whose symptomatology is not necessarily urgent and whose general physical findings are favorable. In our own experience, wholly unsuspected deaths, due to pulmonary embolism or coronary thrombosis in patients with excellent preoperative findings, has taught us the wisdom of caution in preliminary surgical discussions.

In discussing the subject of resectional fatalities with pathologists, and a result of autopsy reviews in these cases, it appears that bronchopneumonia is a very common etiology. The advanced age, debilitated state, frequency of coronary disease render broncho-pneumonia a logical conclusion.

Next in order of frequency is urinary sepsis, i. e., cystitis with or without ascending pyelitis or pyelonephritis. In a majority of these instances there is usually strong evidence that at least a cystitis with retention diverticula, stone, and so forth were present prior to surgery. In some cases, however, when pyelonephritis without a trace of cystitis was found, the conclusion was obvious that the infection had advanced from the operative site along the ureteral lymph vessels to the kidney. Such a retrograde pathway of spread is not infrequent; it is commonly seen in bladder carcinoma.

Cellulitis of the urinary bladder with an associated spreading cellulitis of pelvic floor and fascia was formerly a frequent cause of septic death. The process either dissected downward into the ischiorectal fossa and perineum or ascended retroperitoneally between the peritoneum and transversalis fascia, finally terminating in retrorenal suppuration, abscess and death.

An interesting comment on the above was that in practically all instances a pre-existing parenchymatous prostatitis with multiple abscess was reported.

Hemorrhage, per se, as a cause of fatalities in modern resection is quite infrequent. However, the instrumental trauma instituted in relieving the overdistended bladder is often productive of urosepsis and finally general septicemia.

SUMMARY

1. The authors have considered the subject of urinary infection and resectional procedures from a broad and general viewpoint.
2. Resection is the procedure of choice in the management of senile hyperplasia.

3. Massive intravesicle protrusions are reserved for open surgery. However, one's aptitude and experience will determine the choice in these cases.
4. A tangible working review of bacteriological studies and their management was considered, and conclusion with notes on resectional mortality.

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BIBLIOGRAPHY

- Barney, J. Dellinger: Transurethral Prostatic Resection Versus Prostatectomy, *The New England Journal of Medicine* 217: 1073, 1937.
- Bumpus, H. C.: Avoidance of Complications of Prostatic Resection, *Southwestern Medicine* 20: 85, 1936.
- Bumpus, H. C., Jr.: Complications Following Prostatic Resection, *American Journal of Surgery* 38: 89, 1937.
- Bumpus H. C., Jr.: Urinary Tract Infections From a General Practice Standpoint, *California and Western Medicine* 50: 351, 1939.
- Carroll, Grayson, Lewis, Bransford and Kappel, Louis: Mandelic Acid: Its Therapeutic Value and Limitations, *American Journal of Surgery* 42: 365, 1938.
- Cook, Edward N.: Urinary Antisepsis, *Journal of the Iowa State Medical Society* 28: 421, 1938.
- Cook, Edward N.: Chemotherapy in Infections of the Urinary Tract, *Journal of Urology* 39: 692, 1938.
- Davis, Theodore M.: Technic of Prostate Resection, *Journal of Urology* 37: 763, 1937.
- Droller, H.: Calcium Mandelate and Sulfanilamide in Treatment of Urinary Infections, *British Medical Journal* 2: 657, 1938.
- Emmett, John L.: Recent Developments in Transurethral Prostatectomy, *Archives of Physical Therapy* 20: 473, 1939.
- McCarthy, Joseph Francis: Endoscopic Prostatic Resection, *Bulletin of the New York Academy of Medicine* 14: 554, 1938.
- Nesbit, Reed M.: The Limitations of Transurethral Prostatectomy, *Journal of the Michigan State Medical Society* 38: 770, 1939.
- Nesbit, Reed M.: The Limitations of Transurethral Prostatectomy, *Texas State Journal of Medicine* 34: 736, 1939.
- Olsen, Paul F.: Expanding the Scope of Transurethral Prostatic Resection by Means of a Two-stage Operation, *The Journal of the Iowa State Medical Society* 28: 47, 1938.
- Plaggemeyer, H. W., and Weltman, Carl G.: The Limitations of Transurethral Resection of the Prostate Gland, *The Journal of Michigan State Medical Society* 36: 5, 1937.
- Plaggemeyer, H. W., and Weltman, Carl G.: The Limitations of Transurethral Resection of the Prostate Gland, *Journal of Urology* 38: 389, 1937.
- Randall, Alexander and Hughes, Boland: Therapeutic Management of Urinary Infections, *Annals of Surgery* 108: 903, 1938.
- Thompson, Gershom J.: Transurethral Prostatectomy, *New Orleans Medical and Surgical Journal* 90: 142, 1937.
- Thompson, Raymond: Mortality in Prostatic Surgery. Technique of Prostatic Resection by the Davis Method; Analysis of 108 Cases, *Southern Medicine and Surgery* 100: 251, 1938.
- Turner, B. Weems: Contraindications and Complications Incident to Transurethral Prostatic Resection, *Journal of Urology* 37: 815, 1937.
- Young, Hugh H.: Some Problems in Surgical Treatment of the Prostate, *Journal of the American Medical Association* 110: 280, 1938.

THE SPECIFIC TREATMENT OF ANEMIA WITH LIVER AND IRON

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All the red cells in the body together make up an organ just as definite as the liver or the brain. This organ, designated the erythron by Boycott,¹ is the largest organ in the body. It differs from other organs in numerous ways. It is constantly in motion; the component cells are not nucleated, and are not united as the cells of other organs are; each cell functions as an individual unit. The purpose of the red cell, and thus of the erythron, is to provide a container for hemoglobin by which oxygen is carried from lungs to tissues. This is a fundamental function in the body, since the life of every cell depends on an adequate and constant supply of oxygen.

The erythron of a normal man has a volume of about 2,250 cc., contains nearly 800 grams of hemoglobin, and is made up of about 25 trillion red cells. A red cell functions like a cup on an endless chain conveyor, taking up oxygen in the lungs and releasing it in the tissues. While circulating the red cell is subjected to much mechanical and chemical trauma. An average cell wears out in about thirty days. During this time it makes about 60,000 round-trips from lungs to tissues. Thus, the erythron is continually changing and has to be completely replaced every month. To maintain the red cells at the normal level, about one trillion red cells containing 30 grams of hemoglobin must be formed daily. The erythrocyte formation proceeds at the rate of nearly one billion cells per minute.

Erythrocytes, after they have functioned on an average of a month, show the effects of the mechanical and chemical wear and are taken out of the circulation by the reticulo-endothelial cells of the spleen. The cell stroma is completely broken up. The hemoglobin released when the cell breaks up does not return to the blood as such but is disintegrated by the reticulo-endothelial cells. The globin-hematin combination in the hemoglobin molecule is split up, the iron in the hematin fraction is set free, and bilirubin is formed. Bile pigment is the sole recognizable end-product of erythrocyte destruction.

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Since red cells are formed at a rapid rate, a large amount of building materials such as water, mineral salts, protein, fat, and carbohydrates are required to make them, as all these are contained in the cell. Such nonspecific materials are those required for making all cells. Two specific substances are necessary also; one enters into the formation of stroma, the other is required to make hemoglobin. The substance necessary for normal stroma formation results from the action of a specific secretion of the gastric mucosa (the intrinsic factor of Castle) on some element in the food (the extrinsic factor of Castle). This substance is supplied by liver and liver substitutes. It has the property of specifically maturing the erythrocyte or putting a finishing touch on it in preparation for emergence for the bone marrow. This specific principle has been designated the erythrocyte-maturing factor (EMF)².

As the stroma of the red cell is formed by non-specific components and the specific erythrocyte-maturing factor, hemoglobin is deposited in the stroma to saturation which is one-third the total mass. The hemoglobin is made by the reticulo-endothelial cells of the bone marrow. The porphyrin nucleus needed for building the hemoglobin molecule is abundant. However, hemoglobin cannot be made without iron. This specific element is often deficient because the reserve store in the body is very small. To replace the 30 grams of hemoglobin normally destroyed each day, about 100 mg. of iron are required. The total amount of iron in the body is only about 4 gm. and nearly 3 gm. of this is in hemoglobin. Only 85 to 90 per cent of the iron set free from the hemoglobin broken down each day is used again, so 10 to 15 mg. must be supplied each day to make up the deficit. The diet seldom contains much iron so if there is a deficient intake of iron-containing foods a deficiency develops. When external hemorrhage occurs the most important loss is in iron; with internal hemorrhage the iron is conserved. The hemoglobin content of the blood falls rapidly if the supply of iron is inadequate.

The marrow in which the cells are being formed is thought of as a grist mill which is supplied by three hoppers. Two hoppers supply the specific substances, iron and the erythrocyte-maturing factor (EMF) of liver and liver substitutes. The third hopper supplies the nonspecific

elements of the cells. The erythrocyte-maturing factor and the nonspecific materials are absorbed from the gastro-intestinal tract; iron is partly supplied in the same manner and in part by the iron set free as hemoglobin is destroyed.

A number of factors influence the needs for and the supply of the specific building materials. With growth, the total hemoglobin of the body increases because the blood constitutes a fixed fraction (about 1/13th) of the body weight. If a normal man has 800 grams of hemoglobin, a child one-half his weight has only 400 grams of hemoglobin. As the total hemoglobin increases with growth, the store of iron in the body must increase proportionately. This added need may be difficult to obtain from the food so must be supplied as medication. Menstruation means a constant loss of iron which must be replaced. Pregnancy and lactation also deplete the store of iron of the mother.

Besides the physiologic factors of growth, menstruation, and pregnancy and lactation on the maintenance of a normal supply of the specific elements, the formation of stroma and hemoglobin is influenced by other conditions. Cell-building materials are absorbed from the gastro-intestinal tract. With achlorhydria or diarrhea absorption may be interfered with. With hypermetabolism more of these substances are needed. Likewise, infection, hypometabolism, toxemia as from nephritis, or poisons as lead may interfere with normal marrow activity and influence the building of red cells and the formation of hemoglobin. All such possible influencing factors must be taken into consideration in deciding on the use of liver and iron in the treatment of anemia.

In clinical anemia there may be a lack of the erythrocyte-maturing factor, a lack of iron, or of both specific elements. The need may result from a deficiency in supply, absorption or utilization or from an increased need from growth, pregnancy or increased metabolism. If the specific fractions of liver and iron are required because of a deficient supply or a greater need, the giving of adequate amounts should overcome the deficiency. If there is some disease or abnormal condition which diminishes the size of the marrow as leukemia, or prevents the normal activity of the marrow as nephritis, it is apparent that increasing the supply of the erythrocyte-maturing factor and iron is of little value if any. In

some cases where there is deficient utilization, an added amount of a specific factor may enable the bone marrow to take up more. Only a small percentage of the iron taken in, for instance, is converted into hemoglobin. The utilization of iron may be greatly influenced by some toxic process as infection. Here it is possible that an added amount of iron may be of help although the defect is not really in supply. Little is known about the amount of the erythrocyte-maturing factor used. In the hemolytic anemias with a rapid regeneration of red cells, as indicated by a high reticulocyte count, it is possible that the supply of erythrocyte-maturing factor may not be adequate to supply the excessive demand. Here liver may help. It is distinctly unusual, however, for liver and iron to be of much clinical aid in the treatment of anemia unless there is a defect in supply or absorption of the specific factor of liver and iron in the light of the amounts needed.

An iron deficiency is by far the most important cause for an anemia because of the small reserve supply of iron, the needs for growth, pregnancy and lactation, the relatively small amounts of iron in the food, and the frequent significant loss of iron by chronic, long-continued hemorrhage as from hemorrhoids and menorrhagia. If iron is lacking to make hemoglobin, the first laboratory manifestation is a low color index, showing that the stroma is not filled with hemoglobin. As the iron deficiency continues and becomes more severe, the cells become smaller since there is no point in having stroma if there is no hemoglobin to fill it. Early then in an iron deficiency anemia the cells are of normal size but do not have the normal complement of hemoglobin, so the anemia is normocytic and hypochromic. Later, the anemia is microcytic and hypochromic. There is seldom any marked decrease in the number of cells.

With a deficiency in the erythrocyte-maturing factor, as in pernicious anemia, the bone marrow becomes red through the piling up of cells which are not ready to leave the marrow. Immature cells are larger than mature erythrocytes. As the erythrocyte-maturing factor (EMF) is incorporated, the cell becomes smaller. If there is a deficiency of this specific factor, the cells are thus larger and usually contain more than the normal amount of hemoglobin. Such an anemia is macrocytic and usually hyperchromic. The

number of cells is usually greatly decreased.

If a laboratory study shows a hypochromic and microcytic anemia, there must be a deficiency in supply or utilization of iron. With a macrocytic and hyperchromic anemia there is a lack of supply or utilization of the erythrocyte-maturing factor (EMF). In the anemia due to an iron deficiency as for instance with an adequate intake, the hopper supplying iron is not filled. Such cells as are delivered from the marrow are small and deficient in hemoglobin. The indication is to fill the iron-containing hopper by giving iron preparation. In anemia due to an inadequate supply of the erythrocyte-maturing factor one hopper is empty so the indication for treatment is to give liver or liver substitutes. Such red cells as are turned out are larger and filled with hemoglobin.

Rarely there may be a deficiency of both iron and the erythrocyte-maturing factor. Since the effect of a deficiency in iron on the red cell is just the opposite of that of a lack of the erythrocyte-maturing factor, a normocytic and normochromic anemia may result from this combined deficiency so the deficiency would not be detected by the laboratory study.

Since the use of liver and iron depends on knowledge of the physiology of the red cell, the following facts discussed above may be summarized:

1. Red cells and hemoglobin are constantly being lost and replaced.
2. The change is very rapid, so a trillion erythrocytes and 30 grams of hemoglobin are replaced daily.
3. Specific and nonspecific elements are necessary for making red cells and hemoglobin.
4. The nonspecific materials are the protein, fat, carbohydrates, vitamins, and mineral salts required to make all cells.
5. The specific elements required are (a) the erythrocyte-maturing factor (EMF) supplied by liver and liver substitutes to make stroma of red cells and (b) iron for the synthesis of hemoglobin.
6. The supply of erythrocyte-maturing factor is normally adequate to meet even abnormally large demands as the liver and other organs contain a large reserve.
7. Added amounts may be required when (a) a normal amount is not made in the stomach as in pernicious anemia, (b) the bone marrow can-

not utilize the specific principle normally and (c) when there is an extensive long-continued demand as in a hemolytic anemia where the formation of new cells proceeds at an abnormally rapid speed to compensate for cells lost.

8. The reserve store of iron is small so an iron deficiency develops quickly if iron is lost through hemorrhage or if the intake of iron is insufficient to meet normal needs.

9. Additional iron is required to supply the (a) normal increase in store of iron necessary for growth, the increased use in pregnancy and lactation and the loss of iron incident to menstruation and (b) the deficiency of iron due to an inadequate intake, increased loss through hemorrhage, and the added amount necessary to supply the increased needs in hyperthyroidism, in decreased absorption due to achlorhydria or diarrhea, and in impaired utilization of iron by the marrow in myxedema.

10. The need for the erythrocyte-maturing factor is shown by a macrocytosis of the red cells indicated by an increased volume index.

11. A lack of iron is shown by a hypochromia of the red cells indicated by a low color index. With a long-continued iron deficiency, a microcytosis shown by the low volume index is present also.

The use of liver and iron in the treatment of anemia is only an application of the physiologic principles already discussed. A diet rich in animal protein and containing an abundant amount of fruit and vegetables should always be insisted on. A liberal serving of liver should be taken as often as possible. The liver may be cooked in any way desired. Heat at the usual cooking temperatures does not affect the specific principle. Whenever possible, it is most valuable each day to add liver cocktail containing equal amounts of ground broiled liver and tomato juice with the addition of a teaspoonful of yeast extract (vegex).

It is difficult, however, to administer enough of the specific principle of liver (erythrocyte-maturing factor) unless concentrates of liver or gastric mucosa are given. The liver concentrates are the preparations of choice since these are available for both oral and parenteral use. Preparations made from gastric mucosa can be given by mouth only. The parenteral use of the erythrocyte-maturing factor is the most effective. The same amount of the specific principle of

liver is at least thirty times as active with parenteral as with oral use. The efficacy of oral administration often decreases as the patient gets older, and with long-continued use. Parenteral treatment is also more economical than oral administration when one considers the comparative amounts of the specific principle necessary to return the blood to normal, and to keep it so.

There are many liver preparations available for specific therapy. Unfortunately, these vary greatly in potency and so in therapeutic effect. The better liver extracts are now standardized on the basis of units. One unit is the amount of specific principle needed to keep the blood normal for one day. Too much dependence, however, cannot be placed on the number of units any given preparation is supposed to contain. The extracts can be standardized only on patients so one cannot be sure that a unit is always the same. Patients with idiopathic pernicious anemia vary greatly in the amount of the erythrocyte-maturing factor required to make the blood normal and to keep it at a normal level. A potent preparation of a responsible manufacturer only should be used. Even with such a preparation the best method of administration should be determined by each clinician. A concentrated extract containing 15 units per cc. is the best for uncomplicated cases of pernicious anemia. If there is a significant neurologic lesion, a less concentrated extract is more effective. We have used a preparation containing 5 units per cc. in such cases.

The most important and spectacular application of liver therapy is in the treatment of idiopathic pernicious anemia. The seriousness of this disease is best shown by the fact that it was uniformly fatal before the discovery of the value of liver by Minot and Murphy. If completely treated, however, the disease should never be of any significance to the patient. If not completely treated, the patient may seem to progress satisfactorily but may continue to have a persistent mild anemia. All too often, however, the undertreated patient will develop a subacute combined sclerosis of the spinal cord which may be very serious while the mild anemia is unimportant. It is much better to overtreat than to undertreat a patient with pernicious anemia since the cost of therapy is small as compared with the seriousness of the disease.

Many different plans of treatment have been

suggested. We have used the following procedure for a number of years with excellent results. When the patient first presents himself with active pernicious anemia or when in relapse, a subcutaneous injection of 1 cc. of a concentrated extract containing at least 15 units of the active principle is given daily for fourteen days. During this time, if possible, the patient is kept in bed. As soon as the appetite returns, which is usually from the fifth to seventh day, the anemia diet with the addition of a liver cocktail daily is begun. A similar injection is given twice a week for the remainder of a three-month period. For the second three months an injection is given once a week and for the next six months one every two weeks. After this period of one year, usually only one injection each month is required if the preparation referred to is used although one would think that this would not be adequate judging from the standardization of 15 units. We have many patients who have been treated in this manner for as long as seven years. The blood has remained entirely normal and a cord lesion has never developed in a patient completely treated.

If the patient has a combined sclerosis of the spinal cord before treatment is begun, therapy should be even more vigorous. This may be carried out by continuing the frequent injections for a longer period, by eating more liver and by taking liver extract by mouth also. It is best in such cases to use a less concentrated extract since elements contained in liver other than the erythrocyte-maturing factor may help in combating the spinal cord lesion. We have used here 3 cc. injections of an extract containing 5 units per cc.

The best criterion of efficient and complete therapy is the maintenance of the red cell volume. That is easily determined by the hematocrit and cell counts. It is true that almost without exception the volume is normal if the count is five million or over in a man and four and a half million and over in a woman. A complete blood study should be done at least every three months as long as the patient lives. An increase in the volume of the red cell beyond the normal always heralds a relapse or indicates incomplete therapy.

The manner of administration of liver extract in the anemia of pregnancy, of sprue, of congenital hemolytic icterus, and of other clinical

states in which there is decreased absorption, increased need or impaired utilization of the specific principle must be determined for each patient on the basis of the need, and treatment given accordingly.

A hypochromia of the red cells indicated by a low color index with or without a microcytosis indicates that the stroma of the cell is not filled with hemoglobin. This deficiency is due to an insufficient supply of iron in the bone marrow or a defect in the utilization of iron by the reticulo-endothelial cells of the marrow. If the defective utilization of iron is the basis of the iron deficiency, large doses may be given with the hope that at least some of it will be used. Only rarely, however, is this true.

If the iron deficiency is due to an insufficient intake, or to an increased loss of iron by hemorrhage, the formation of hemoglobin is rapid and the defect is completely compensated for if an effective preparation of iron is given.

If iron is needed, it should always be given in adequate dosage. Only a fraction of the iron in any medicinal preparation is utilized and with some preparations this fraction is exceedingly small, so large doses are always necessary. Almost any iron preparation is effective if it is given in large enough doses. The size of the dose depends on the chemical state and solubility. Many different commercial preparations are offered. It is most probable, however, that iron is absorbed and utilized best in the ferrous state. Iron is present in the hemoglobin molecule in the ferrous form. For this reason it is far better to give iron as a ferrous salt. The different preparations of iron commonly used vary greatly in the percentage of utilization and hence in the dosage necessary for the desired therapeutic effect. Witts³ gives the following figures for the most frequently prescribed preparations.

TABLE 1			
Preparation	Effective daily dose grains	Iron content mg.	Utilization of iron per cent.
Metallic:			
Reduced iron	20-90	1,200-5,000	0.5-2
Ferrous:			
Ferrous chloride	4-8	100-200	12.5-25
Ferrous sulphate	9-12	180-240	14.0
Ferrous carbonate (as Blaud's pill)	45-60	300-400	8.0
Ferric:			
Ferric ammonium citrate	60-120	800-1600	1.5-3

It is apparent from these figures that the ferrous salts are far preferable to reduced iron and

ferric salts. The ferrous salts as now available are inexpensive and should usually be used. I see no justification for using the ferric salts or reduced iron. Bland's pills (as supplied in the tabloid Bland's pill by Burroughs, Wellcome & Co.) are made by mixing ferrous sulphate with sodium carbonate so they contain both ferrous carbonate and ferrous sulphate. A 10-grain tabloid pill contains $2 \frac{3}{5}$ grains ferrous sulphate and $1 \frac{4}{5}$ grains sodium carbonate which is sufficient to form 2 grains ferrous carbonate. When given in doses of 20 grains three times a day, excellent results are obtained. Ferrous carbonate 12 to 18 grains; ferrous sulphate, 9 to 12 grains; and ferrous chloride, 4 to 8 grains daily, give a maximum reticulocyte and therapeutic response. The rate of hemoglobin increase is greater when the hemoglobin level is very low at the beginning of treatment than when higher. An effective iron preparation should increase the hemoglobin one to two per cent each day and give a reticulocyte rise.

The oral preparations of iron are so effective and satisfactory that there seems little reason giving iron parenterally. Iron given parenterally is thirty times as active in the formation of hemoglobin as when given by mouth but the margin between effective and toxic doses is small. Utilization is good by mouth and ferrous salts are cheap.

If the deficiency in iron is supplied, there is no point in continuing therapy when the cause for the deficiency is eliminated. In idiopathic hypochromic anemia associated with achlorhydria there is usually some difficulty in the absorption of iron from the gastro-intestinal tract so the anemia will recur if treatment is stopped entirely. Here the best method is to give some iron for one week of each month even after the blood has become normal.

There has been much discussion concerning the value of supplementing iron with copper. In adults there is little clinical evidence that added copper is of value in the regeneration of hemoglobin. Likewise, there seems little reason for adding vitamin B to supplement iron or liver.

There is seldom any indication for giving iron and liver extracts together. If the erythrocyte-maturing factor is needed, iron is seldom lacking. If iron is indicated, the anemia is seldom influenced by liver extract. Only rarely is an

anemia due to a deficiency of both iron and the specific principle of liver.

If there is an achlorhydria with a hypochromic anemia, liver extract may be needed and valuable. In the presence of free hydrochloric acid this is seldom true. An iron deficiency is seldom present in a macrocytic anemia. The important thing in every anemia is to determine the cause. If there is a deficiency in building materials, the element lacking should be determined and supplied in sufficient amounts. There is no point in wasting money on liver preparations if no deficiency in the specific maturing principle is present; iron should not be given if there is no lack of iron.

SUMMARY

1. The physiology of the red cell has been reviewed and the conditions influencing the supply and utilization of iron and the erythrocyte-maturing principle of liver emphasized.
2. The erythrocyte-maturing factor is best supplied as liver extract given subcutaneously or intravenously.
3. Pernicious anemia is due to an inability of the stomach to secrete the intrinsic factor of Castle with which the erythrocyte-maturing factor is made.
4. In pernicious anemia the lacking specific principle must be given throughout the life of the patient.
5. The patient with pernicious anemia should be overtreated rather than undertreated to prevent the development of a cord lesion or a recurrence of the anemia.
6. The macrocytosis of the red cells characteristic of a deficiency in the erythrocyte-maturing factor disappears with complete and adequate therapy and reappears whenever the treatment is inadequate.
7. Iron should be given orally in the ferrous form and in adequate dosage.
8. Parenteral iron therapy is rarely indicated.
9. If iron is correctly given, the hypochromia and microcytosis characteristic of an iron deficiency disappears.
10. It is seldom necessary to give iron and liver extract together. Liver extract is of value in a hypochromic anemia only in the presence of an achlorhydria.
11. Conditions which unfavorably influence

the absorption and utilization of iron and the specific principle of liver should be searched for and corrected.

2020 E. 93 St.

REFERENCES

1. Boycott, A. E.: President's address; blood as a tissue; hypertrophy and atrophy of red corpuscles, *Proc. Roy. Soc. Med.* 23: 1-11, 1930.
2. Haden, R. L.: The mechanism of anemia, *J. Lab. and Clin. Med.* 22: 439-459, 1937.
3. Witts, J. L.: Therapeutic action of iron, *Lancet* 1: 1-5, 1936.

THE INJECTION TREATMENT OF HEMORRHOIDS; RESULTS WITH A SODIUM PSYLLIATE SOLUTION

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The injection treatment of hemorrhoids consist of obliteration of varices by fibrous tissue formed following the injection of an irritating solution into or above the hemorrhoidal mass. The usual solutions used in this method of treatment are five per cent phenol solutions in vegetable oils, ten to 20 per cent solutions of phenol in water and glycerine, and five per cent solutions of quinine and urea hydrochloride in water. More recently various solutions used for the production of chemical thrombosis in varicose veins have also been used. The development of fibrous tissue proliferating solutions for the injection treatment of hernia seems to offer another method for producing fibrosis in the hemorrhoidal masses. It was decided to use one of these solutions, a five per cent aqueous solution of sodium psylliate* with two per cent benzyl alcohol, in a series of 50 patients with hemorrhoids to obtain information as to the efficacy of the solution used in treatment (table 1).

TABLE 1

Types of Patients Treated.	
Internal hemorrhoids.	
Group 1. Bleeding without protrusion.	31.
Group 2. Bleeding with moderate protrusion.	5.
Group 3. Bleeding with marked protrusion.	4.
Extero-internal hemorrhoids.	
Group 1. Bleeding without protrusion.	1.
Group 2. Bleeding with moderate protrusion.	6.
Group 3. Bleeding with marked protrusion.	3.

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*The sodium psylliate used on the patients discussed in this report was kindly furnished by G. D. Searle & Company of Chicago.

TABLE 2		
Number of Treatments Required.		No. of Treatments
No. of Weekly	Patients	
Treatments		
1.	6	6
2.	8	16
3.	9	27
4.	11	44
5.	4	20
6.	4	24
7.	4	28
8.	1	8
9.	2	18
12.	1	12
Total Treatments		203

TABLE 3	
Amounts of Solution and Pain Reactions	
Amount of Solution	Pain Reactions
1/4 cc.	3.
1/2 cc.	8.
1/3 cc.	1.
1 cc.	3.
Total	15 Reactions.

INDICATIONS FOR THE INJECTION TREATMENT.

In the rectal division of the Surgery dispensary of the Research and Educational Hospital we have formulated definite indications for the injection treatment of hemorrhoids. These indications have been reported in detail elsewhere.¹ Patients with internal or extero-internal hemorrhoids, and without associated surgical lesions of the anorectal region are divided into three groups with respect to symptoms present.

Group 1. Patients having no symptoms and where the hemorrhoids are found on anoscopic examination, or those with only painless rectal bleeding occurring at defecation. These patients give no history of protrusion. Thirty-nine per cent of these patients have internal and three per cent have extero-internal hemorrhoids.

Group 2. Patients complaining of bleeding with some protrusion on defecation, but where the protruding mass is reduced spontaneously after defecation. Four per cent of these patients have internal and 21 per cent have extero-internal hemorrhoids.

Group 3. Patients with a history of rectal bleeding and with a marked protrusion at stool or which may occur spontaneously, and where the mass must be replaced digitally. Only eight per cent of these patients have internal hemorrhoids while 21 per cent have extero-internal hemorrhoids.

Injections are recommended in all patients in group 1, and produce about 90 per cent clinical cures. Injections are used in patients in group

2, if they refuse operation although only about 50 per cent will result in clinical cures. Group 3 are considered surgical cases and injections are used in these patients only to control bleeding until such time as they can be admitted for operation. In a series of 100 patients previously reported, about 40 per cent were treated by injection and about 60 per cent were recommended for operation.

TECHNIQUE OF INJECTION

The instruments needed for the injection treatment of hemorrhoids are a tubular anoscope, either electrically lighted or used with a head lamp, and a hypodermic syringe with a two-inch 24- to 22-gage needle. The patient who has been previously examined with a sigmoidoscope, requires no other preparation than the emptying of the rectum by a normal bowel movement. He is placed in either the left lateral or knee chest position as preferred by the physician. The needle is attached to the syringe and one cc. of the sodium psylliate solution is aspirated into the syringe. The well lubricated anoscope is inserted into the anus and the obturator withdrawn. Manipulation of the anoscope allows the hemorrhoidal mass to project into the lumen. The mass is touched with an applicator dipped in alcohol. The point of the needle is inserted into the upper portion of the mass, below the mucosa and superficial to the muscularis. When in the proper location the needle can be easily moved in the submucosa. Aspiration is first done to make certain that the needle is not in a blood vessel, and then from $\frac{1}{4}$ to $\frac{1}{2}$ cc. of the solution is injected. The needle is left in place for one minute during which time the mass will be seen to swell and become edematous. The needle is given a full rotation on its longitudinal axis and then withdrawn. If the masses are of any considerable size, only one hemorrhoid is injected at a treatment. The total amount of solution used is never more than one cc. at any one treatment. The anoscope is withdrawn and the patient is allowed to leave. Injections are given at weekly intervals until the hemorrhoidal masses are obliterated.

RESULTS

Amount of fibrosis produced. Following the injection of the sodium psylliate solution there is a prompt edema of the hemorrhoidal mass.

The swollen area feels boggy to the touch for about three days and then becomes quite firm. At the end of a week there is a definite induration at the site of injection which appears to extend upward into the submucosa for a short distance. If an attempt is made to introduce a needle into the indurated mass the tissue is so firm that it is difficult to enter the submucosal layer. By the end of the second week the palpable induration has disappeared, but the submucosa still feels resistant when an attempt is made to introduce the needle. If induration has been sufficient further injection into the area is difficult, but if the fibrosis has not been complete it is possible to reinject with a smaller amount of solution. Following the course of treatment the induration disappears and the mass is so reduced in size that it does not protrude into the lumen of the anoscope, as it did before the treatments were started. It is our impression that a smaller amount of sodium psylliate will produce the same degree of fibrosis, and produce it more promptly than will the phenol solutions. It is more nearly comparable with the results produced by five per cent quinine and urea hydrochloride.

Number of injections necessary. In the series of 50 patients observed in the dispensary, thirty-four required four or less weekly treatments, and sixteen required five or more. The number of treatments necessary is shown in table 2.

Control of bleeding. Thirty-eight of the 50 patients complained of some degree of rectal bleeding. In 24 of these patients the bleeding stopped after one injection, in seven after the second, six after the third and only one required four treatments before bleeding stopped. Several patients had had previous injections of either phenol in oil or quinine and urea hydrochloride without control of bleeding. It is our impression that bleeding is controlled more promptly with sodium psylliate than with other solutions.

Control of prolapse. Thirty-two of these patients had no prolapse; eleven had a moderate degree of prolapse which was controlled after the treatments. In seven patients with marked protrusion (group 3) there was still some protrusion at defecation after the treatments were discontinued.

REACTIONS

The untoward reactions following the use of

sodium psylliate solution were of two types: local reactions that consisted of pain of varying severity after injection and general reaction similar to shock or allergic reactions.

Pain following the injection was more common. This occurred in some degree in twelve of the 50 patients, and in 15 of 203 treatments; about seven and one-half per cent. Two patients had pain after two or three injections, but the remainder had pain only once. The amount of solution used did not seem to be a factor in the production of pain (table 3). The average dose in the total series was $\frac{1}{2}$ cc. Eleven times $\frac{1}{4}$ cc. was injected, ten times one cc. was used. In two instances two cc. was injected, and neither of these patients had pain following injection.

The pain usually came on within one-half to two hours after injection and lasted for 24 to 48 hours. It was never severe enough to require more than the coal tar analgesics and sometimes the application of heat to the perineum.

General reactions occurred in two patients. In the one there was weakness and pallor, nausea, profuse perspiration and rapid pulse following the injection of a two cc dose of solution. The reaction was relieved by the injection of two three-minim doses of adrenalin chloride 1/1000. Although there was no history of allergy or drug sensitivity the use of sodium psylliate was stopped in this instance.

The other patient felt "shaky" and weak immediately after the injection of $\frac{1}{2}$ cc. of solution. This subsided without treatment and the patient left the dispensary after 30 minutes. On the patient's return the next week there was an area of moist dermatitis around the anus which we felt was probably allergic and resulted from the sodium psylliate. Treatments were continued at twice weekly intervals with much smaller doses, in an attempt to immunize the patient, and the dermatitis disappeared after two weeks. The patient received six further treatments without recurrence of the skin lesions or other evidences of allergic manifestations.

It was felt that the sodium psylliate solution should not be used in patients that might have had previous intravenous injections for varicose veins. The total dose should be small enough to not distend the hemorrhoidal masses unduly, and thus reduce the possibility of local pain following injection. Injections should be made into the submucosa well above the anorectal line.

CONCLUSIONS

1. The use of five per cent sodium psylliate solution is reported in a series of 50 patients.
2. The patients were selected as being suitable for injection treatment, or were treated to control bleeding while awaiting operation.
3. The control of bleeding was more prompt and effective with injections of sodium psylliate than with phenol or quinine and urea hydrochloride solutions.
4. The amount of fibrous tissue produced was satisfactory.
5. Fewer injections were necessary to produce a clinical cure than with the other solutions used.
6. Reactions which occurred were chiefly those of local pain following injection. There were two general reactions noted, neither of which proved to be severe.

BIBLIOGRAPHY

1. Reuther T. F., and Almquist C. O.: Indications for the injection treatment of hemorrhoids, *Jour. Indiana State Med. Assoc.* 33: 306-308, 1940.

HYPOPHYSITARY STERILITY IMPROVED BY SPLITTING THE OVARY

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A house without children is not a home, and it is biologically unsound since husband and wife are not united by the strong band that is created through the common care for the child of their own blood. Sterility, therefore, is one of the foremost causes of unhappy marriages. In the United States alone there are two million childless couples who are still in the childbearing age, which is an important factor in maintenance of the greater community — the state.

The physician, when he is confronted with a case of sterility, should expend every effort to determine its cause. This calls for close cooperation between the physician and the patient and is often a long, tedious and difficult task.

Sterility may be caused by general diseases, such as syphilis, tuberculosis; by disease which lead to a reduction of the strength of the body, or to psychological causes such as frigidity and dyspareunia. In addition to these, there are the mechanical (anatomical), chemical or hormonal causes resting in the female genitalia. For example, a strong acid reaction of the vaginal con-

tents can kill the spermatozoa so soon that they cannot reach the uterus and tubes. There may also be disturbances of the ovaries, pituitary or thyroid glands. The part which other endocrine glands play in sterility will not be discussed, since in those cases sterility is not the main complaint. For the same reason, sterility caused by the male partner will not be discussed.

CASE REPORT

The patient was a woman who had been married for four years without conceiving. Her menses had been established at the age of fifteen years; periods are regular and of five days' duration.

Examination of the patient reveals her to be 156 cm. tall; the measurements of the upper border of the symphysis-floor and symphysis-vertex are the same, namely 78 cm.; the span corresponds to the height, 156 cm. The pelvis is small in all its diameters: Interspinous 20 cm., intercrustous 24 cm., Baudelocque 17 cm., conjugata vera 8 cm. The uterus measure: os externum to fundus 6 cm., and the uterus itself is rather small and feels harder than normal. The ovaries are hard, small bodies. Her blood pressure is 100/80; the teeth are hypogonadal, with large central and stunted lateral incisors, and, in general, the patient is thin.

From the measurements given above, it is noted that the patient is small. The diagnosis of small stature offers no difficulties in a child, but is not so easy in an adult. Growth after birth is governed by the thyroid, pituitary and sex glands. Of these, the thyroid gland is most important in early postnatal life; the pituitary assumes a leading role somewhat later and continues to rule up to the completion of skeletal development. The effects of the sex glands appear during adolescence. The harmonious action of these three glands leads to a normal development. Disturbance of function of any one of them is followed by secondary changes in function of the others, often to such an extent that it is difficult to determine which gland is primarily at fault.

In the patient herewith presented, we find stunted growth, leanness, hypoplastic uterus and ovaries. If the thyroid gland were the cause of the small stature, one would find short legs and a long trunk. However, a disturbance of the thyroid could have been present in early childhood only, as there is no evidence of other hypothyroid stigmata as myxedema and sluggishness. In dysfunction of the thyroid gland, genital development is normal and the basal metabolism is low. In this patient the metabolic rate

was normal, the uterus and ovaries hypoplastic, and menstruation regular.

Failure of growth stimulation by the pituitary gland produces a rather uniform lack of development; there is no disproportion between the upper and lower half of the body, and the lack of growth is usually associated with other manifestations of pituitary deficiency, as obesity and infantile genitalia. The hypopituitary patient shows small, pretty features, soft silky hair, large teeth in excellent condition, and hypoplastic genitalia; the basal metabolic rate is normal, there is lack of pneumatization of the bones of the skull, i. e., rudimentary sinuses and scanty diploe. We find no obesity in this case and the teeth are of the hypogenital type. In general, the disturbances here seem to point to the pituitary gland, since anatomical causes, such as cervical infection and non-patent tubes, had been excluded.

In this woman there was a small infantile uterus and small hard ovaries which apparently were not able to produce mature ova. Injections of the patient's blood serum in infantile mice showed the presence of estrogenic substance during the week before menstruation in an amount not different from normal menstruating women; anterior pituitary hormone was not present in an amount to produce hemorrhage or luteinization in infantile mice ovaries. For the experiments infantile or spayed mice were used and the changes of uterus and ovaries were watched.

The picture in this case was that of anovulatory menstruation in a patient with infantile ovaries, uterus and tubes and consequent sterility. In anovulatory menstruation the graafian follicle begins to mature and produce increasing amounts of estrogenic substance. Rupture of the follicle, however, does not occur but the process continues until the ovum dies. Then the granulosa degenerates and production of estrogen ceases and, after an interval, bleeding occurs; thus there is produced a periodic bleeding which resembles the normal menstruation. In cases of a persistent follicle cyst we find an enlargement of the uterus which simulates pregnancy, but bleeding takes place at irregular intervals and is protracted, taking place when the cystic-hyperplastic mucosa of the uterus causes ulcers by pressure. Sterility occurs in anovulatory menstruation because there are no mature ova present, and the diagnosis of "anovulatory cycle"

was confirmed in this case by a specimen taken from the uterine mucosa in which no secretory phase was found during several cycles.

The treatment of endocrinopathic sterility in general has not been very successful, due to the limited knowledge of the pathology concerned. Disregarding the male partner, there is necessary for conception the production of mature ova, patent tubes, and an adequate sized uterus in the secretory phase, having sufficient musculature to retain and develop the fertilized ovum. In this particular case it was necessary to enlarge the uterus and tubes to more nearly normal size, and to produce ovulation with the consequent formation of corpora lutea and the secretory phase of endometrium.

To acquire enlargement of the uterus, estrogen was given hypodermically over a prolonged period until the cervixfundus measurement was 7.5 cm. and the endometrium showed a tendency to reach the cystic hyperplastic stage which we find in persistent folliculin cysts. When the uterus had reached this stage of enlargement, an attempt was made to produce ovulation by the injection of gonad stimulating hormones of the

anterior pituitary gland, using pituitary-like hormone, pituitary hormone and gonad stimulating hormone from mares' serum. Injections were given hypodermically during the first half of six menstrual cycles and were then discontinued, since the results were not encouraging. It should be remembered that it is not a difficult problem to produce ovulation, luteinization and a secretory phase of the endometrium in normal ovaries, but there is apparently a difference between normal and infantile ovaries. With this in mind and since a long continued application of gonadotropic hormone leads to general luteinization with exhaustion of the graafian follicle material, it was thought best to remove the obstacle to ovulation presented by the hard ovarian capsule.

This was done by splitting one ovary from its convexity down to the mesovarium and turning it inside out. The cut margins were sutured to the mesovarium or broad ligaments so that a large amount of ovarian tissue was liberated from the hard ovarian capsule. At the same time a disc of the whole ovary was obtained which, upon microscopic examination, showed many dilated graafian follicles, areas of luteinization, but nowhere was the ovarian capsule pierced.

After the operation gonadotropic substance from mares' serum was continued and during the second cycle conception took place and in due time a strong healthy boy was born.

CONCLUSIONS

1. While there is no difficulty in obtaining ovulation in normal ovaries, the problem is entirely different in infantile ovaries, tubes and uterus.

2. Infantilism is due to hypofunction of the pituitary gland.

3. An attempt was made to obtain ovulation and fertilization by means of estrogen and various pituitary substances, without result.

4. Because it was felt that the hard ovarian capsule prevented an escape of the ovum, the ovary was split and the cut margins sutured to the broad ligament; operation performed via the vaginal route.

5. Conception took place during the second cycle following operation, resulting in the birth of a strong baby boy in due time.

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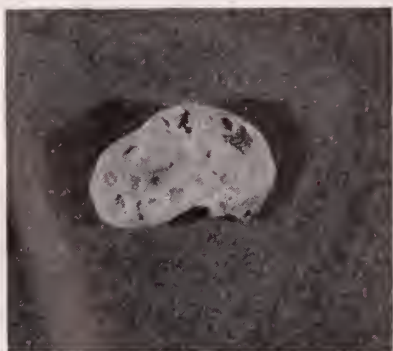


Figure 1. Longitudinal section through the ovary, natural size, with dilated follicles, some luteinized.

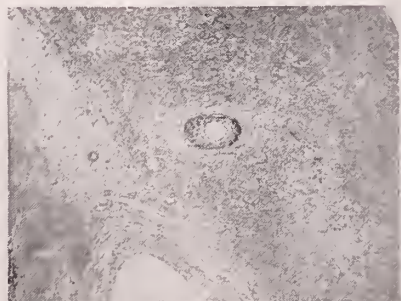


Figure 2. Magnified 45 diameters shows immature ovum, dilated follicles, luteinization none reaching ovarian surface.

Remark: It is interesting that the patient 2 years after her first delivery became pregnant again and gave birth to a healthy baby without any kind of treatment. The turning inside out of the ovary was apparently sufficient.

A SURVEY OF CONGENITAL ANOMALIES AS FOUND IN 1131 NECROPSIES

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The increasing development of embryological knowledge makes it difficult for the pathologist to keep up with developmental pathology as seen in the postmortem room. The embryologist, on the other hand, very rarely has opportunity to follow a great number of necropsies and thus learn the incidence of anomalies and their effect upon the individual. Unless he does so, however, he sees only those single cases which are referred to him because the physician or pathologist is particularly interested in them. As a research fellow of the Cook County Graduate School of Medicine I had the opportunity to investigate the postmortem material of the Cook County Hospital from the embryological point of view. During ten months I was able to see a considerable number of cases of developmental pathology which briefly will be reviewed here. I wish to acknowledge the kind support of Dr. W. Schiller, Director of Laboratories of the Cook

County Hospital, in making this work possible.

Most statistics on malformations are made with regard to the occurrence of particular types among a number of patients, necropsies, or malformations in general. The heterogeneity of the work done can very well be seen in Schwalbe's ('06) extensive review (1. c., p. 202), and there has been no considerable change since. Only Serdukoff ('29) gives a table of all the malformations seen among 7,143 births, of which, however, only a small number were investigated by necropsy. Due probably to the latter fact, he found not more than 64 malformations. I hope to show in the following that such statistical work can bring up a number of interesting questions and will also help to answer them, if carried out on a large scale.

The present review includes malformations proper, as well as embryonic diseases, because these cannot be sharply separated. A malformation may predispose the bearer to a disease in embryonic or postnatal life, and an embryonic disease at the time of a certain developmental process may cause a malformation. Only gross pathology can be considered here, but many findings were verified by histological methods. When examining histological malformations, we face different problems such as, e. g., the developmental potencies of single cells or cell groups. Therefore this part of developmental pathology will not be included here. However, both groups cannot be sharply limited from each other.

Table 1 gives a chronological enumeration of the congenital anomalies as observed from July 1, 1938, to April 30, 1939, among 1,131 necropsies.

TABLE 1

No.	race	sex	age	developmental anomalies or fetal diseases
1938				
SB 48	w	m	stillborn	Urogenital tract: bilateral hydroureter
SB 49	n	f	stillborn	Urogenital tract: patent urachus
725	n	f	premature	Urogenital tract: patent urachus
729	w	m	46 d	Urogenital tract: absence of left kidney
731	w	m	16 m	Nervous system: spina bifida occulta
732	n	f	6 m	Heart: defect of interventricular septum, patent foramen ovale and ductus arteriosus
737	n	f	55 y	Urogenital tract: right double ureter
738	n	m	7½ m	Nervous system: hydrocephalus, sacral spina bifida
740	n	f	3 m	Heart: interauricular septum defect
742	n	f	5 w	Spleen: accessory spleen
748	w	m	infant	Erythroblastosis fetalis
751	n	f	22 m	Heart: defect of interventricular septum, aorta and pulmonary artery originate from right ventricle
766	w	f	premature	Heart: aorta originates from right ventricle, hypoplasia and stenosis of pulmonary artery, defect of interventricular septum Diaphragm: almost completely absent on right side

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				Extremities: 4 toes on left foot
				Intestine: incomplete rotation
				Spleen: two accessory spleens
768	w	f	50 y	Urogenital tract: right double ureter
781	w	m	newborn	Heart: aorta and pulmonary artery from right ventricle, hypoplasia of pulmonary artery, patent foramen ovale and ductus arteriosus
				Respiratory tract: incomplete lobation of lungs
787	w	f	39 y	Digestive tract: Meckel's diverticulum
791	w	m	54 y	Digestive tract: Meckel's diverticulum
803	w	f	13 d	Heart: defect of interauricular septum
				Digestive and respiratory tracts: atresia of upper part of esophagus, lower part originates from bifurcation of trachea
				Urogenital tract: left hydroureter, stenosis at opening into bladder
830	w	f	premature	Heart: defect of interventricular septum
				Extremities: right talipes equinovarus
SB 57	w	m	stillborn	Oral and nasal cavities: cheilognathopalatoschisis
865	n	m	64 y	Urogenital tract: multiple cysts of kidneys
				Digestive tract: multiple cysts of liver
SB 60	?	f	stillborn	Respiratory tract: abnormal lobation of lungs
879	n	m	89 y	Urogenital tract: multiple cysts of kidneys
883	w	f	52 y	Urogenital tract: left ureter fissus
898	w	f	newborn	Heart: hypertrophy
910	w	m	55 y	Respiratory tract: abnormal lobation of lungs
935	w	m	13 m	Urogenital tract: hypoplasia and cystic degeneration of left kidney
942	w	m	7 d	Extremities: ulnar deflexion of distal parts of fingers of both hands
945	w	m	63 y	Urogenital tract: multiple cysts of kidneys
967	w	m	42 y	Urogenital tract: multiple cysts of kidneys
970	n	f	2½ m	Heart: patent foramen ovale and ductus arteriosus
973	n	f	9 m	Heart: atrium not divided and not communicating with right ventricle, defect of interventricular septum
				Urogenital tract: right double ureter
977	n	f	35 y	Nervous system: anencephaly, cervical myeloschisis
SB 71	n	f	stillborn	Oral and nasal cavities: cleft palate, defect of nose septum
				Urogenital tract: bilateral double hydroureters, multiple cysts of kidneys
981	w	f	4 m	Digestive tract: malposition of proximal half of colon
991	n	f	9 m	Urogenital tract: multiple cysts of kidneys
998	w	m	58 y	Digestive tract: multiple cysts of liver
				Urogenital tract: multiple cysts of kidneys
1,000	w	f	60 y	Nervous system: lumbosacral myelomeningocele, internal hydrocephalus
1,004	w	m	1½ m	Urogenital tract: multiple cysts of kidneys
1,007	w	f	58 y	Spleen: cyst
1,014	w	f	3 w	Urogenital tract: absence of left kidney
1,023	w	m		Blood vessels: abnormally high bifurcation of aorta
				Digestive tract: Meckel's diverticulum
1,034	w	m	36 y	Digestive tract: cecum and colon ascendens mobile
1,040	ind.	f	37 y	Respiratory tract: abnormal lobation of left lung
				Abdominal wall: amniotic umbilical hernia
1,046	w	m	3 d	Digestive tract: absence of caudal part of large intestine, fistula between cecum and bladder
				Urogenital tract: exstrophy of bladder with fistula of cecum, division of penis and scrotum into separate lateral halves
SB 79	w	f	stillborn	Nervous system: anencephaly
1,053	w	m	68 y	Urogenital tract: multiple cysts of kidneys
1,054	n	m	4 m	Heart: defect of interventricular septum, stenosis of pulmonary artery, patent ductus arteriosus
1,075	w	m	74 y	Urogenital tract: hypoplasia of left kidney, multiple cysts in both kidneys
SB 87	mex	f	stillborn	Nervous system: internal hydrocephalus
1,088	w	f	1 d	Heart: complete absence of interventricular septum, hypoplasia of aorta, absence of mitral valve, patent ductus arteriosus
				Digestive tract: defect of muscularis of the stomach, protrusion and rupture of mucosa
1,089	w	m	4 d	Urogenital tract: bilateral double ureters
1,099	n	f	47 y	Digestive tract: Meckel's diverticulum
1,101	w	f	25 y	Spleen: accessory spleen
				Spleen: accessory spleen
1,118	w	m	58 y	Urogenital tract: multiple cysts of right kidney
1,127	w	m	71 y	Digestive tract: multiple hemangiomas of the liver
1,129	w	m	52 y	Spleen: accessory spleen
1,133	w	m	21 y	Nervous system: internal hydrocephalus, sacral myelomeningocele
1,153	w	m	2 m	Nervous system: thoracolumbar myelomeningocele
1,162	w	m	new-born	Heart: defect of interventricular septum
				Digestive tract: atresia of ductus cysticus
1,172	w	f	new-born	Urogenital tract: patent urachus
1,187	w	m	premature	Digestive tract: incomplete descensus of colon
SB 93	w	f	stillborn	Nervous system: anencephaly, cervicothoracic myeloschisis
1,193	w	m	36 y	Urogenital tract: hypospadias
1,196	n	f	41 y	Urogenital tract: multiple cysts of kidneys
				Digestive tract: Meckel's diverticulum
SB 96	n	f	stillborn	Spleen: accessory spleen

1,212	w	m	17 m	Respiratory tract: abnormal lobation of right lung
1,216	?	f	42 y	Urogenital tract: hypoplasia of right kidney
1,240	w	m	16 h	Respiratory tract: completely separated lobe of lung with no connection with bronchial tree
				Urogenital tract: hypertrophy of bladder
1,245	w	f	2½ m	Nervous system: internal hydrocephalus, lumbar meningocele
1,262	w	m	76 y	Spleen: accessory spleen
SB 101	n	m	stillborn	Digestive tract: benign "cystadenoma" of jejunum
1,286	n	m	55 y	Respiratory tract: abnormal lobation of both lungs
1,289	w	f	46 y	Spleen: accessory spleen
1,304	n	m		Urogenital tract: absence of left kidney
1,311	w	m	50 y	Urogenital tract: hypoplastic and dystopic right kidney
1,313	w	m	3 m	Nervous system: internal hydrocephalus, thoracolumbar meningocele
				Urogenital tract: bilateral hydroureters and stenosis of openings into bladder
1,316	w	f	3 w	Nervous system: internal hydrocephalus, thoracolumbar meningocele
				Heart: patent foramen ovale and ductus arteriosus
SB 105	w	m	stillborn	Nervous system: internal hydrocephalus
				Extremities: Shortening of left forearm, hand attached at right angle, fingers pointing radially, thumb absent
1939				
4	w	f	7 d	Erythroblastosis
14	n	f	4 m	Heart: defect of interauricular septum
20	n	m	40 y	Respiratory tract: abnormal lobation of left lung
				Spleen: accessory spleen
26	w		15 d	Urogenital tract: intersexuality: penis and female internal genitalia; horseshoe kidney, dilatation of ureters, dilatation, hypertrophy and diverticula of bladder
				Digestive tract: absence of lower part of large intestine
				Extremities: bilateral talipes equinovarus
				Abdominal wall: absence of muscles
30	w	f	8 w	Extremities: bilateral talipes equinovarus; right arm: contracture of forearm, one finger: left hand: four fingers, one of them attached just distal to the ulna
31	w	m		Digestive tract: malposition of cecum
32	w	f	25 y	Heart: aortic valve with two leaflets
37	w	m	59 y	Urogenital tract: multiple cysts of kidneys
38	n	m		Extremities: bilateral hexadactylism
44	n	f	63 y	Urogenital tract: multiple cysts of kidneys
54	w	m	43 y	Respiratory tract: abnormal lobation of left lung
56	n	f	46 y	Urogenital tract: right double ureter
70	n	f	new-born	Urogenital tract: dilation of bladder and ureters
72	n	m	2 m	Respiratory tract: abnormal lobation of left lung
99	w	f	65 y	Urogenital tract: right double ureter
				Digestive tract: Meckel's diverticulum
104	w	m	3 d	Heart: atresia of pulmonary ostium, fusion of leaflets; patent foramen ovale and ductus arteriosus
107	w	f	3 m	Spleen: six accessory spleens
115	n	f	51 y	Spleen: accessory spleens
129	w	f	55 y	Urogenital tract: hypoplasia of left kidney
132	w	m	premature	Anhydramnios, fusion of skin and amnion; deformities of right arm and hand and left side of face by amniotic adhesions
134	w	m	63 y	Heart: absent ostium of right coronary artery
135	w	f	21 y	Spleen: accessory spleen
136	n	f	38 y	Spleen: accessory spleens
137	w	m	1 m	Nervous system: internal hydrocephalus
				Eyes: cataracta
				Extremities: mild clubfeet
140	w	f	59 y	Spleen: accessory spleens
147	w	m	49 y	Urogenital tract: horseshoe kidney
157	w	f	3 y	Spleen: accessory spleens
159	w	m	53 y	Digestive tract: Meckel's diverticulum
181	w	m	29 y	Digestive tract: Meckel's diverticulum
194	w	m	6 m	Nervous system: internal hydrocephalus, myelomeningo-cystocele from 3rd thoracic vertebra downward
205	w	m	65 y	Urogenital tract: multiple cysts of kidneys
209	w	f	9 y	Urogenital tract: hypoplasia of left kidney
212	w	f	1 m	Nervous system: internal hydrocephalus, lumbar myelomeningocele
				Heart: patent foramen ovale and ductus arteriosus
215	w	m	5 m	Heart: defect of interventricular septum
216	w	f	72 y	Urogenital tract: multiple cysts of kidneys
SB 18	w	f	stillborn	Spleen: accessory spleen
239	w	f	79 y	Urogenital tract: multiple cysts of kidneys
255	n	m	6 w	Spleen: accessory spleens
264	w	m	63 y	Urogenital tract: multiple cysts and adenomas of kidneys
265	w	m	22 y	Heart: interventricular septum defect
				Digestive tract: Meckel's diverticulum
SB 22	n	m	stillborn	Heart: interventricular septum defect
273	w	f	25 y	Urogenital tract: dermoid of left ovary

277	w	f	2 d	Nervous system: anencephaly
				Respiratory tract: multiple areas of non-development of alveoli (?)
299	w	f	5 m	Nervous system: internal hydrocephalus, lumbosacral spina bifida
				Urogenital tract: right double ureter
SB 26	w	f	stillborn	Urogenital tract: hydronephrosis, hydroureters, hypertrophy of uterus, elongation of vagina
				Teratoma of coccygeal region
345	?	m	1 d	Multiple foci of hemopoiesis in the liver
350	w	m	1 d	Abdominal wall: amniotic umbilical hernia
363	w	f	44 y	Urogenital tract: hypoplasia of right kidney
374	w	m	60 y	Urogenital tract: multiple cysts of kidneys
376	w	f	37 y	Spleen: accessory spleen
377	n	f		Urogenital tract: left double ureter
378	w	f	premature	Digestive and respiratory tracts: atresia of upper part of esophagus, lower part originating from bifurcation of trachea; imperforate anus, fistula between rectum and vestibule of vagina
				Urogenital tract: fused kidneys on left side; fistula between rectum and vestibule and vagina
392	w	m	1 d	Heart and vessels: interventricular septum defect, abnormal origin of large arteries from arch of aorta
				Respiratory tract: agenesis of left lung
395	w	f	premature	Urogenital tract: patent urachus
416	n	m	23 y	Urogenital tract: double right ureter
429	w	f	76 y	Urogenital tract: double right ureter
430	w	m	10 m	Digestive tract: free mesentery of entire colon
				Diaphragm: partial absence of muscles
				Extremities and body: deformities of neck, chest, hands; scoliosis, talipes calcaneovalgus
432	n	f	22 d	Heart: patent ductus arteriosus

It is difficult to draw a line between malformations and minor irregularities which are still within the limits of normal variability. Moreover, many minor malformations are not worth mentioning. Therefore, an artificial line must be drawn and it is impossible to do it in a way which agrees with everyone's conception. Single cysts in the kidneys, e. g., are not recorded here because they are too frequent and too unimportant from both the practical and the theoretical points of view. On the other hand, multiple cysts are considered because they apparently show a generalized abnormal disposition of the anlagen of the kidney.

Club feet are noted as independent malformations only in the absence of anomalies of the spinal cord. Patent ductus arteriosus is recorded among the heart anomalies because it is as a rule

associated with congenital malformations of the heart.

Table 2 gives a review of the same material, classified as to the organs affected and, where practicable, as to the types of malformation. It also shows the incidence in different races and sexes. As multiple anomalies are very frequent, one case may appear several times in this table. Therefore the sum of malformations exceeds the number of cases by far. There is also a discrepancy in the numbers in some horizontal lines of the table since races other than white and negro are not considered because of their small incidence. However, these cases appear in the columns referring to sex and in the total numbers in the last column. On the other hand, the multiple malformations of the one inter sex on record are not entered in the sex columns.

TABLE 2

Organ, malformation	sex		race		total number of cases
	male	female	white	negro	
Nervous system					
Hydrocephalus	7	5	10	1	12
Anencephaly	1	3	3	1	4
Spina bifida	7	5	10	2	12
Eyes					
Cataract	1	0	1	0	1
Cardiovascular system					
heart	9	15	15	9	24
blood vessels	2	0	2	0	2
Face					
clefts of lip, jaw, palate	2	0	2	0	2
amniotic adhesions	1	0	1	0	1

Lungs					
abnormal lobation	7	1	4	3	8
separated lobe	1	0	1	0	1
absent left lung	1	0	1	0	1
areas of maldeveloped tissue	0	1	1	0	1
Digestive tract					
atresia of esophagus with tracheo-esophageal fistula	0	2	2	0	2
rupture of muscularis of stomach	1	0	1	0	1
cystadenoma of jejunum	1	0	0	1	1
Meckel's diverticulum of ileum	5	4	8	1	9
malposition of colon	3	3	4	1	6
absent caudal part of colon	1	0	2	0	2
fistulas of large intestine	1	1	2	0	2
imperforate anus	0	1	1	0	1
Liver					
cysts	2	0	1	1	2
hemangiomas	1	0	1	0	1
localized hemopoiesis	1	0	1	0	1
atresia of cystic duct	1	0	1	0	1
Kidneys					
absence of left	3	0	2	1	3
hypoplasia of left	2	2	4	0	4
hypoplasia of right	1	2	2	0	3
dystopia of right	1	0	1	0	1
horseshoe kidney	1	0	2	0	2
fused on left side	0	1	1	0	1
multiple cysts	12	7	16	3	19
Ureters					
left fissus	0	1	1	0	1
left double	0	1	0	1	1
right double	1	7	5	3	8
bilateral double	0	2	1	1	2
left hydroureter	0	1	1	0	1
bilateral hydroureter	2	2	4	1	5
Urinary bladder					
hypertrophy	1	1	2	1	3
diverticula	0	0	1	0	1
exstrophy	1	0	1	0	1
patent urachus	0	4	2	2	4
Genital organs					
uterovaginal canal	0	2	2	0	2
ovary, dermoid	0	1	1	0	1
external genitalia	2	0	3	0	3
intersexuality			1	0	1
Spleen					
accessory	5	13	12	6	18
cyst	0	1	1	0	1
Erythroblastosis	1	1	2	0	2
Diaphragm	1	1	2	0	2
Abdominal wall					
congenital umbilical hernia	2	0	2	0	2
absence of muscles	0	0	1	0	1
Extremities					
upper	5	1	5	1	6
lower	3	3	7	0	7
Teratoma of coccygeal region	0	1	1	0	1
Multiple amniotic adhesions	1	0	1	0	1
<hr/>					
Total number of malformations	101	98	162	40	206
Total number of cases	67	69	96	36	137
Ratio of autopsies	58	: 42	65	: 35	

The numbers in this table suggest an unequal distribution of sex in several groups, although the total numbers are almost equal in both sexes¹. A preponderance of the male sex was found in the groups of lung and some of the kidney malformations, whereas the female

sex predominates in malformations of the heart and spleen as well as in double ureters and patent urachus. Here, as in the distribution of race, only larger groups of cases are mentioned because small numbers are too much subject to chance and therefore are likely to give mislead-

ing results. Concerning the race, a remarkable difference is noticed in the incidence of most of the groups of malformations as well as in the total number. Among 137 cases recorded here 96 were whites and 36 negroes. In this department 65 per cent of the postmortem examinations were performed on whites, so these numbers should not be compared directly. After consideration of this percentage, the relative incidence in whites is 1.44 x that in negroes. The difference is still greater if we consider the number of malformations. Figured in the same way as the above comparison, this number is 2.2 x greater in whites. However, this preponderance of the white race is not equal in all groups. So we find, after again adapting the numbers to the above ratio, that the incidence of double ureters is higher in negroes than in whites and that of heart malformations almost equal. After subtraction of these few groups with even distribution, the preponderance of whites in the remaining types of malformations would be still greater than indicated above.

As the number of cases is not great enough to allow definite conclusions, these facts are given here just to call attention to the question of racial differences in the incidence of malformations. As far as I know, this question has not been brought up yet, although many authors have found considerable differences in the incidence of many diseases between the two races in question, with different results according to the disease considered (see Maes and McFetridge). Data on congenital conditions are only reported incidentally, as Bivings' findings on the occurrence of umbilical hernia in newborns (whites: 8.2 per cent., negroes: 27 per cent.) and the results of Williams and Edmonds concerning the incidence of atypical origin of the great arteries from the arch of the aorta (common origin of the innominate and left carotid arteries more than twice as frequent in negroes than in whites).

In detail, the tables show that among the anomalies recorded in the nervous system, hydrocephalus and different types of myelocoele and meningocele are most common, appearing 12 times each. In nine cases both anomalies are associated with each other, and only three times were they found separately. This coincidence is

well known but as yet its cause has not been found. Two of the four cases of anencephaly are also associated with myelocoele which is not surprising as both are analogous malformations of different levels of the central nervous system.

The heart anomalies are of many different types and septum defects are the most common. No evidence of fetal inflammatory changes of the valves was obtained. However, no definite decision can be made without extensive histological study.

Most of the anomalies found in the digestive and respiratory tract are typical, some of them belong to rare types, as, c. g., atresia of the esophagus with tracheo-esophageal fistula (cases 803-1938 and 378-1939), the lobe of lung tissue attached to the mediastinum without connection with the bronchial tree ("Nebenlunge" of the German authors, case 1240-1938) etc.

The malformations of urogenital organs are also typical and well known almost without exception. Hypoplasia or absence of one kidney, horseshoe kidney, multiple cysts of the kidneys, hydronephrosis, and double ureter were found frequently. There is, however, one case of particular interest, showing intersexuality (penis and female internal genital organs) and multiple other anomalies including a tremendous hypertrophy of the bladder wall, up to 12 mm. in a 15-days-old infant (case 26-1939).

The high incidence of accessory spleens (18 cases) is well known. The malformations of the abdominal wall include one case of absence of muscles associated with the above mentioned intersexuality, and two cases of amniotic umbilical hernia, one of them occurring with exstrophy of the bladder (case 1046-1938). Among the remaining anomalies only the case of amniotic adhesions (case 132-1939) is worth mentioning. It demonstrates strikingly the power exerted on the fetus by adhesions to the placenta, resulting in extensive distortion of the body; in our case the face especially.

Table 1 once more illustrates the high incidence of multiple anomalies of apparently independent origin. Among the 137 cases an association of two independent anomalies was found 20 times, three independent malformations were found in six cases, five and six anomalies once each. Of course, the term *independent* re-

¹58% of the bodies examined were male.

fers only to the formal genesis. There are certainly other factors, perhaps genetic, which account for the accumulation of malformations in so many cases. It should always be borne in mind that in an individual with one malformation there are often others associated. Again, there is a difference between whites and negroes, the average number of malformations found in the 137 cases considered here being 1.7 in whites and 1.1 in negroes, i. e., about 55 per cent. greater in the former.

Congenital malformations have an exceptional position among the abnormal conditions in the organism. We are faced with them at birth or later without having a chance to protect the individual against them. Many of them develop at a time when the affected organ is not yet in full function and disturbances develop after birth when the maldeveloped organ is unable to fulfill its purpose. Therefore one must always be on the lookout for malformations although they are comparatively rare.

The practical importance of the malformations as recorded here varies to a very high degree. Many of them are known to be fatal, others to be innocent, but there is a large number of cases where it is impossible to know definitely the prognosis even when the abnormal condition has been diagnosed. Unilateral hypoplastic kidney with a normal kidney on the other side may, e. g., be borne without any trouble throughout a normal lifetime, but may cause death in other cases by predisposing the bearer to nephritis or renal insufficiency.

Thus teratology proves to be an important and interesting part of pathology. Even at the autopsy table we are puzzled many times by new and unexpected findings of developmental pathology. The present report shows the high incidence of related cases found even with the limited opportunities of the routine post-mortem examination. A remarkable difference in the incidence of many malformations was found between the white and negro race.

BIBLIOGRAPHY

- Bivings, L.: Preconceptional and prenatal influences affecting the new-born. *J.A.M.A.* 101: 1703-1705, 1933.
- Maes, U., and E. M. McFetridge: Racial trends of the negro and white in certain surgical diseases, *Am. J. Surg.* 33: 5-17, 1936.
- Schwalbe, E.: *Die Morphologie der Missbildungen des Menschen und der Tiere*, 1. Jena: G. Fischer, 1906.
- Serdukoff, M. S.: Des malformations de la partie inférieure du corps, *Gynéc. et Obstétr.* 13: 264-275, 1926.

Williams, G. D., and H. W. Edmonds: Variations in the arrangement of the branches arising from the aortic arch in American whites and negroes, *Anat. Rec.* 62: 139-146, 1935.

Addendum: After completion of this report, two publications on the same subject appeared, indicating that the incidence of malformations in negroes is about twice as high as in whites.

Murphy, D. P.: Congenital malformations: A study of parental characteristics with special reference to the reproductive process. Philadelphia: The Author, 1939.

Potter, E. L.: Fetal and neonatal deaths. *J. A. M. A.* 115: 996-1001, 1940.

RECENT ADVANCES IN GYNECOLOGIC ENDOCRINOLOGY

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During the last two years three new preparations have been introduced into gynecologic therapy. Two of them, the male hormone testosterone propionate and the gonadotropic hormone obtained from pregnant mares' serum are true hormones, whereas the third preparation, stilbestrol, is a synthetically prepared chemical product which, however, possesses numerous properties of the estrogens.

TESTOSTERONE PROPIONATE

The male hormone testosterone or its derivative testosterone propionate, resembles progesterone, the corpus luteum hormone in many ways. It is capable of inducing progestational-like proliferation of the endometrium in rabbits and rats, it will inhibit uterine contractions induced by estrogen, maintain pregnancy following the excision of the ovaries, delay parturition in the normal pregnant rat, neutralize vaginal and uterine responses to estrin and completely suppress spontaneous estrus cycles in rats and mice. By administering testosterone propionate to monkeys, Zuckerman¹, induced ovarian atrophy and endometrial involution and he suppressed menstruation throughout the duration of treatment. In normal women similar results have been obtained. We² have found that testosterone propionate inhibits ovarian activity with the suppression of uterine bleeding and involution of the accessory organs, including the breasts, uterus and vaginal mucosa. Fibromyomas which are under the influence of the ovary, diminish in size. However, these anatomical changes persist only as long as the patient is under the influence of the androgen.

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The mechanism by which testosterone propionate produces these alterations is not through its progestational action, because changes typical of progesterone have not been demonstrated in the endometrium. This does not matter because there is almost certainly no definite correlation between excessive bleeding and histological changes of the endometrium. Most likely also, there is no specific endometrial pattern in dysmenorrhea. We must look elsewhere than the endometrium for the etiology of most ovarian dysfunctions and the explanation for the therapeutic responses in these conditions. It may be that testosterone propionate inhibits the pituitary follicle-stimulating hormone resulting in ovarian atrophy and subsequent uterine involution due to lack of estrin. Abarbanel³ offers a physiodynamic explanation of the *modus operandi* by which excessive bleeding is controlled by testosterone propionate. This interpretation is based upon the response of the myometrial elements to testosterone propionate. First, this hormone inhibits rhythmic, intermittent uterine contractions, thereby eliminating the pumping action of these movements. As a result, the volume of blood flowing to and thus through the uterus definitely decreases. Second, the direct stimulative, squeezing effect of testosterone upon the myometrial elements brings about a functional constriction of the myometrial blood vessels. The sum total of the twofold effects results in a decided reduction in the flow of blood to the endometrium. Consequently the amount of uterine bleeding is very considerably diminished.

Male hormone therapy has been found to be of definite help in a few gynecological disturbances. These are excessive uterine bleeding, dysmenorrhea, painful breasts premenstrual tension and menopausal disturbances.

For the control of profuse uterine bleeding, large amounts of testosterone propionate are necessary because in order to stop the profuse flow of blood, ovarian activity must be suppressed completely. Generally to check excessive uterine bleeding, between 300 and 500 mg. of this hormone must be given hypodermically in divided doses three times a week over a period of a month. When the hormone is injected subcutaneously instead of intramuscularly, smaller doses may be satisfactory. I have seen cases where sufficient testosterone was administered to prevent ovulation as demonstrated by endome-

trial biopsies, and yet the menses were not diminished or delayed significantly. It appears that ovulation can be inhibited with about one-half the amount of testosterone propionate necessary to suppress the menses (anovular menstruation).

The relief from dysmenorrhea produced by testosterone propionate is due to its inhibiting effect on uterine muscle contractions or to the suppression of ovulation. Due to this action, some women with dysmenorrhea will be relieved of their pain when given between 90 and 250 mg. of the hormone in six divided doses during the last two weeks of the menstrual cycle even though the menstrual flow is not disturbed. In some cases, however, this amount of testosterone propionate will not suffice and about 75 to 100 mg. will have to be given every week throughout the month to suppress the menses in order to alleviate the dysmenorrhea.

The beneficial effects of testosterone propionate in cases of painful breasts may be explained on the basis of a temporary menopause. However, suppression of the menses is not essential in order to obtain the desired results. Since complete ovarian suppression is not necessary to relieve painful breasts, in some cases it is possible that the direct antagonism of estrogen by the male hormone plays a role in the treatment of mastopathies. In cases of painful breasts between 10 and 25 mg. should be given three times a week during each of the two weeks preceding the menstrual flow.

In some cases of distressing premenstrual tension, 10 to 25 mg. of testosterone propionate administered three times a week during the last two weeks of the cycle relieves these annoying symptoms. Recently my associate, Dr. Freed, and I⁴ have encountered striking success with ammonium chloride in women with premenstrual distress. When 30 grains of this drug are administered during each day of the second two weeks of the menstrual cycle, many women who have headaches, nausea, bloating of the abdomen, emotional disturbances and edema a few days before the onset of the menstrual bleeding, experience dramatic relief. While the ammonium chloride is being taken the patient should eliminate salt and sodium bicarbonate from her food.

Generally the benefits derived from testosterone propionate cease shortly after the use of the hormone is discontinued. Hence, physicians

must bear in mind that this form of therapy is only temporary. However, in some cases, the improvement persists for a long time following cessation of the injections. We have no satisfactory explanation for this phenomenon.

A word of caution in the use of male hormones in women is important. These hormones, if given in large amounts may produce symptoms of virilism, such as growth of hair, especially on the upper lip and chin, a lowered pitch in the voice and a slight enlargement of the clitoris. Furthermore, a few women gain weight and develop an acneform eruption (Greenhill and Freed)⁵. However, practically all of these disagreeable signs disappear shortly after the injections are stopped.

GONADOTROPIC HORMONE FROM THE SERUM OF PREGNANT MARES

In 1926 P. E. Smith⁶ and Zondek⁷ independently proved that the anterior pituitary gland provides the physiologic stimulus necessary to regulate the growth and function of the reproductive glands of both males and females. Since that time, numerous efforts have been made to prepare a product which will reproduce in humans the gonadotropic effects of the intact anterior pituitary gland. The first efforts were naturally directed toward extracts from the pituitary glands of animals but thus far these extracts have not been satisfactory for clinical use. A second source of gonadotropic hormones was found in 1928 by Aschheim and Zondek⁸ in pregnancy urine. The origin of this hormone proved to be the placenta and the hormone can be obtained in large amounts from the urine of pregnant animals and humans. Much effort has been expended in studying the effects of these chorionic gonadotropic hormones and it has been found that they likewise do not act exactly like the gonadotropic hormones of the intact anterior pituitary gland.

A third source of gonadotropic hormone was found in 1930 by Cole and Hart⁹ in the blood serum of pregnant mares. In animals this hormone produces effects similar to those which result from extracts of the anterior pituitary gland. Thus it is capable of stimulating the germinative epithelium of the ovaries and testes in laboratory animals, it can induce ovarian growth in primates and it can produce fertile

ovulations in rats, cows, sows and other animals. Hartman¹⁰ was able to bring about ovulation in seven per cent. of 104 monkeys. Davis and Koff¹¹, Siegler and Fein¹², and Gray¹³ have been able to produce ovulation in humans by means of pregnant mares' serum gonadotropic hormone. However, the chances of producing ovulation in women who do not ovulate spontaneously are at present, uncertain. The controlled experiments of Hartman on monkeys were far from promising. Many monkeys were refractory to the hormone and in 16 monkeys, overstimulation of the ovaries resulted. However, the deleterious action of the extracts was only temporary, for the recovery was prompt and complete. Growth of the follicles was usually produced at too rapid a rate. Furthermore, even when ovulation took place, Hartman found indications that "the production of ovulation does not guarantee an endocrine condition favorable to the implantation of a fertilized ovum, for in some cases, the menses occurred too soon after ovulation." The injections were "successful" in producing ovulation in only seven per cent. of the cases.

When this hormone from pregnant mares' serum is effective its action is very rapid. In the rodent and in the primate, follicle maturation, ovulation and corpus luteum formation can occur within 24 hours.

In the human female, the hormone obtained from pregnant mares' serum has been recommended for functional uterine bleeding, amenorrhea, sterility and failure of ovulation. Thus far the controlled clinical results obtained in these gynecological disturbances have not been very satisfactory. The effects produced in the experimental animals have not been duplicated in human beings. Furthermore, since pregnant mares' serum is a protein derivative, care must be exercised in the administration of this potent hormone. Before using it, a small amount should be injected intradermally or placed on the conjunctiva of the eye. It is advisable to wait 30 minutes to see if there is any reaction to the horse serum before injecting a full dose.

In view of the fact that clinical results are very uncertain, that as yet there is no agreement on the dosage of this hormone, and that there is a possibility of serious reaction from the horse serum, it will be better for the general practitioner to leave it to the specialists to continue

experimenting with this substance clinically.

If a practitioner desires to use pregnant mares' serum gonadotropic hormone, in cases of amenorrhea, sterility or functional uterine bleeding, he should first perform an endometrial biopsy to determine whether or not the patient is ovulating. This is readily accomplished in the office by means of a tiny curet or a special hollow, suction curet. The best time to obtain the specimen of endometrium is the first day of menstruation or a day or two before it should begin. The tissue obtained in this manner must be studied microscopically. If it reveals that a secretory or pro gravid endometrium is present, this is evidence that the woman ovulated. It is generally assumed that women who menstruate with the usual degree of regularity and in whom one or more biopsies reveal secretory endometrium, ovulate every month. Such women do not require gonadotropic hormone. In fact, this hormone may do harm by producing excessive follicle stimulation, but this is temporary. If on the other hand, endometrial biopsy performed just before or on the first day of the menses shows a proliferative type of endometrium, this is evidence that ovulation failed to take place. If repeated biopsies prove the absence of a secretory endometrium, mares' serum gonadotropic hormone may be administered in the hope that it will stimulate ovulation. This hormone should only be given when a patient does not ovulate.

STILBESTROL

In 1938, Dodds, Goldberg, Lawson and Robinson¹⁴ reported that they had synthesized a new product, diethylstilbestrol, which possessed estrogenic properties. Dodds, Lawson and Noble¹⁵ found that this substance produced remarkable estrogen effects when given by mouth. In animals this drug is almost as effective when given orally as by the hypodermic route because it loses little of its activity when taken by mouth. It is two and a half times as effective as estrone when given by injection and about 15 to 20 times superior to the natural estrogens when given by mouth. Stilbestrol is not only superior to the natural estrogens because it is so effective when given orally, but it costs very little to make.

The indications for the use of stilbestrol are almost identical with those for the employment

of the natural estrogens. These conditions include menopausal disturbances, gonorrheal vulvovaginitis, senile vaginitis, and pruritus vulvae. The desired effects can be obtained by the oral route alone in doses of 1 and 2 mg. daily until the desired result is obtained. One milligram is equivalent to about 20,000 international units of estrone.

One of the most spectacular effects of stilbestrol may be observed in puerperal women in whom the supply of milk is to be prevented or suppressed. When 5 mg. of stilbestrol are given on each of the first three days after delivery, lactation will be prevented without any discomfort. If 5 mg. are given on each of two or three days after the flow of milk has been established, the supply of milk will diminish rapidly and painlessly even without the use of a breast binder or restriction of fluids. A remarkable fact is the almost complete absence of toxic effects in puerperal women who take stilbestrol.

Unfortunately, not all women can tolerate stilbestrol. A varying percentage of women experience nausea, vomiting and other disagreeable side-effects. This is particularly true of women who take large doses but some women experience these disturbances after only one or two mg. Puerperal women are almost entirely free from these toxic symptoms. Furthermore, as with the use of the natural estrogens, uterine bleeding may be produced in women past the menopause, but stilbestrol not infrequently brings about uterine bleeding even while the drug is being administered. However, this is seldom serious.

Shorr, Robinson and Papanicolaou¹⁶ observed toxic effects in 80 per cent. of 44 women. These effects consisted of nausea, vomiting, abdominal distress, anorexia, diarrhea, lassitude, paresthesias, vertigo, thirst and cutaneous rashes. These authors believe the toxic effects are largely central in origin, following injection as well as oral administration. The incidence of toxic symptoms in Shorr's series was much higher than that reported by other authors and in the series of Dr. Freed and myself.

Contrary to the demonstration of liver damage in animals produced by stilbestrol, no such damage can be detected in women. Freed and Soskin¹⁷ found that almost as many normal women had retention of bromsulphthalein as women

who had been given stilbestrol. Nevertheless, until we know more about stilbestrol we should be cautious in using this drug. Because the question of toxicity has not yet definitely been settled, the United States government has not granted any permits for the sale of stilbestrol. Therefore, it is not available commercially at the present time.

ROUTES FOR ADMINISTERING ESTROGENS

Estrogens are generally administered hypodermically or by mouth. In a few instances such as gonorrheal vulvovaginitis, the estrogens are used in the form of vaginal suppositories and occasionally they are given as rectal suppositories. There is no doubt that estrogens have a distinctly local action. MacBryde¹⁸ demonstrated that estrogens can be absorbed through the skin of women directly into the breast tissue and by this route can produce their characteristic stimulation of mammary growth. The practical application of this form of treatment has little significance. However, in some cases of pruritus vulvae and kraurosis vulvae the local application of estrogens is distinctly helpful. Even when estrogen is applied to the skin in the form of an ointment, a sufficient amount of it can be absorbed to produce an estrogenic effect on the epithelium of the vaginal mucous membrane (Salmon)¹⁹. I have recently been using an ointment of stilbestrol and this promises to be helpful in the treatment of pruritus vulvae.

Another route for the administration of the estrogens is the subcutaneous implantation of pellets of estrogens. When pellets are injected through a wide-bore needle or surgically implanted under the skin, there is a very slow absorption over a period of months. During this time, therefore, the patient need not take any estrogens by mouth or by the hypodermic route because the subcutaneous implants suffice. This route is particularly valuable for young women in whom ovarian function has been eliminated by operation or radiation and in older women who are having a prolonged and distressing menopause. Not only may estrone be implanted subcutaneously but also stilbestrol (and the male hormone, testosterone propionate). These "artificial ovaries" may be left in place for many months during which time there is a slow absorption, sufficient to relieve the patient's symptoms.

SUMMARY

Three new preparations have been introduced into gynecologic therapy during the past two years. These are: (1) the male hormone, testosterone propionate, (2) the gonadotropic hormone derived from pregnant mares' serum and (3) stilbestrol. The first two are hormones but stilbestrol is a chemically-prepared product.

Testosterone propionate is useful in some cases of excessive uterine bleeding, dysmenorrhea, painful breasts premenstrual tension and menopausal disturbances. This hormone must be used with caution in women because of the possibility of producing signs of virilism. These signs however, are temporary.

The gonadotropic hormone derived from mares' serum is theoretically indicated in women who do not ovulate. Before using this hormone it is necessary to perform endometrial biopsies to prove the absence of ovulation. Since the clinical use of this hormone is still in the experimental stage, general practitioners will do well to wait for further controlled clinical reports from specialists before using this hormone.

Stilbestrol is a synthetic chemical product which possesses numerous properties of the estrogens. It may, therefore, be used to relieve menopausal disturbances, gonorrheal vulvovaginitis, senile vaginitis, and pruritus vulvae. It is cheap to manufacture and is highly effective when taken by mouth. However, because of its possible toxic effects it is not yet available commercially.

In addition to the customary routes of administering hormones, namely by the hypodermic route, by mouth, through the vagina and rectum, we now are applying hormones through the skin and under the skin. The subcutaneous implantation of pellets of hormone preparations or "artificial ovaries" will prove most useful for women who presumably will have distressing menopausal symptoms over a long period of time.

In closing I should like to emphasize that great caution must be exercised not only in the use of the new endocrine preparations but also in the employment of the numerous hormones which are now being used superabundantly and unscientifically by many practitioners of medicine.

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REFERENCES

1. Zuckerman, E.: *Lancet*, 2:676, 1937.
2. Greenhill, J. P., and Freed, S. C.: *West. J. Surg., Obst. and Gynec.* 47:301, 1939.
3. Abarbanel, A. R.: *Am. J. Obst. and Gynec.* 39:243-254, 1940.
4. Greenhill, J. P., and Freed, S. C.: *Endocrin.* 26:529, 1940.
5. Greenhill, J. P., and Freed, S. C.: *J. A. M. A.* 112:1573, 1939.
6. Smith, P. E.: *Proc. Soc. Exp. Biol. and Med.* 24:131, 1926.
7. Zondek, B.: *Zeitch. f. Geburts.* 90:372, 1926.
8. Aschheim, S., and Zondek, B.: *Klin. Woch.* 7:1404, 1928.
9. Cole, H. H., and Hart, G. H.: *Am. J. Phys.* 93:57, 1930.
10. Hartman, C. G.: *Johns Hopkins Hosp. Bull.* 63:351, 1938.
11. Davis, M. E., and Koff, A. K.: *Am. J. Obst. and Gynec.* 36:183, 1938.
12. Siegler, S. L., and Fein, M. J.: *Am. J. Obst. and Gynec.* 38:1021, 1939.
13. Gray, L. A.: *South. Med. J.* 33:160, 1940.
14. Dodds, E. C.; Goldberg, L.; Lawson, W., and Robinson, R.: *Nature, London* 141:247, 1938.
15. Dodds, E. C.; Lawson, W., and Noble, R. L.: *Lancet* 1:1389, 1938.
16. Shorr, E.; Robinson, F. H., and Papanicolaou, G. N.: *J. A. M. A.* 113:2312-2318, 1939.
17. Freed, S. C., and Soskin, S.: *Personal communication.*
18. MacBryde, C. M.: *J. A. M. A.* 112:1045-1049, 1939.
19. Salmon, U. J.: *Proc. Soc. Exp. Biol. and Med.* 38:481, 1938.

PRURITUS*

A Review of Its Motivation

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Pruritus is such a common sensation that ordinarily one would assume that all phases concerning its production are known and its delineation a tabulation of facts. Unfortunately, this is not true. There are wide gaps in our knowledge of the basic processes which enter into the phenomenon called pruritus. Concerning some of these, we must simply admit ignorance; for others, we will relate differences of opinion and, for a few, we can record exact information.

Pruritus or itching may be defined as a cutaneous subjective symptom producing a desire to scratch. It is fundamentally not a disease entity but consists of subjective sensations of itching, burning, tingling, tickling, prickling, crawling and smarting which causes the sufferer to rub, press, scratch and otherwise irritate the affected skin. Primarily pruritus is unaccompanied by objective lesional changes.

Many interesting phenomena enter into the production and conduction of the itch stimulus.

Of necessity, these must be discussed separately.

1. SENSORY NERVE STIMULATION

Pruritus is a phenomenon which is activated by stimulation of cutaneous nerves. Epidermal nerves arise from a plexus of medullated nerves in the corium to extend as non-medullated fibers between the prickle-cells to form the interepithelial plexus. They end either in minute swellings between the cells or pass into the cells and terminate in swellings applied to the nucleuses. These fibers are sensitive to touch-impressions and to common sensations as heat, cold and pain. Non-medullated nerves also furnish fibers to the skin to supply chiefly the arrector muscles, sweat coils and blood vessels.

Pruritic impulses are produced by chemical changes in these nerve swellings. These chemical changes in turn must be caused by alterations in the epithelial cells or in the intercellular fluids. We do not know how a nerve impulse is started or what changes occur in the environment of a nerve terminal to produce its activation towards the sensation of pruritus.

Our ignorance of these basic biochemical processes causes the chief obstacle in our complete understanding of the mechanism of pruritus. The problem is not insurmountable, however, as the developing information concerning human autonomic pharmacology will probably have a direct application. Chemical changes must occur comparable to the production by reacting cells and tissues to cholenergic and adrenergic substances and the relation of various drugs to these substances which permits a chemical explanation for the actions of the sympathetic and parasympathetic systems.

2. PERIPHERAL NERVE MECHANISM

It is generally accepted that itching arises through a special mode of activity of the pain-apparatus and is produced by subliminal stimulation of the nerve endings for pain. When certain thresholds of intensity are exceeded, the specific character of itching becomes a pain sensation. However, this does not mean that itching sensation is the same as mild pain because the weakest painful sensation can be distinguished from itching.

Special senses as sight, touch, temperature, taste and smell are related to well-defined specific physical, mechanical or chemical stimuli. Itch-

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ing seems to be activated by various nonspecific stimuli. This would indicate that, in addition to peripheral mechanism, pruritus is modified by various factors including a characteristic central mode of action.

3. RELATIONSHIP OF TOUCH MECHANISM WITH PRURITUS

The peripheral pain mechanism does not seem to be the exclusive peripheral nerve factor in the activation of pruritus. When a light hair is drawn across the skin to produce tickling, the superficial pressure receptors are stimulated. These afferent impulses travel to the brain in the identical pathways for painful impulses. In syringomyelia, itching may be present, although modified, when the perception of pain and temperature is absent but that of touch is still intact. Itching is absent in all cases when pain, temperature and touch is lost. For the development of the complete itching sensation, the mechanism of both pain and touch must be intact.

It is interesting to recall that the cornea and visceral organs register pain but not touch. They, also, do not register itching.

4. RECEPTIVE CENTERS FOR ITCHING IN THE BRAIN

In cortical disturbances, itching is not disturbed even when pain, touch and temperature are markedly impaired. Pharmacodynamic investigations show that itching is not reduced by substances acting on the cortex, as paraldehyde and bromides. A therapeutic decrease is also not experienced by moderate doses of morphine or the usual cortical sedatives. Pain is modified, however, by small doses of barbiturates which have been shown to act on the brain stem and midbrain. Receptive centers for itching are, therefore, not located in the cortex.

Receptive centers are not located in the internal capsule because in capsular hemiplegia itching may be diminished or absent in the areas of sensory disturbances. Central itching in the sense of itch paresthesia is retained in cases of spinal and midbrain damage.

Brain lesions which produce diminished or complete loss of objective perception of pain, touch and temperature but retain central pain also show a preservation of the itch sensation. This is true for pronounced thalamic disease.

The association of central pain with the retention of itch sensation seems to indicate the thalamus as the central origin of itching sensations.

5. REFLEX SECONDARY ITCH SENSATIONS

As with pain, reflex secondary itch sensations may occur at a considerable distance from the site of the stimulus. These secondary sensations are usually simultaneous with the primary sensation but may be delayed. They are generally unilateral and higher up. Pain, and therefore itch sensations, travel over short-chain first-order neurons that end unilaterally shortly after entering the spinal cord near the level of entry. Reflexes are here established with motor cells to produce immediate, protective defensive muscular reactions. Synapses are also established at the level of entrance with still unilateral second-order neurons to establish connection with other sensory cells farther centripetally which in turn give rise to distant secondary itch sensations and scratch impulses. Long third-order neurons which carry itch sensations to the brain and consciousness are usually contralateral and ascend to the brain through the spinotectal and spinalthalamic tracts.

It is not known for certain but secondary itch sensations may also reflexively arise within the central nervous system. Segmentary itching occurs in tabes.

A consideration of the phenomenon of reflex itching and resulting reflex eczema is important clinically in the study of the relationship on many pruritic dermatoses and chronic appendicitis, prostatitis, cholecystitis, etc.

6. VEGETATIVE NERVOUS SYSTEM

An ordinary assumption would indicate that the vegetative nervous system is an integral part of pruritus. At the site of itching, there is often local vegetative reactions as vasoconstriction and goose-skin and, also, sometimes vasodilation with or without urticaria. Pruritus and itching dermatoses are often accompanied by vegetative nervous imbalance chiefly of vagatonia. However, vegetative nervous disturbances, as amylnitrate erythema, blushing, adrenalin anemia, never, in themselves, cause itching. Nor, do either vasoconstriction or vasodilatation prevent it. Vasomotor phenomena that may accompany

pruritus are autonomic reflexes from the sensory stimulation and are not responsible for itching. Independent factors, which may affect the vegetative system, may also affect pruritus.

7. RELATIONSHIP BETWEEN VISIBLE CUTANEOUS CHANGE AND PRURITUS

Visible cutaneous changes, as urticaria, prurigo nodules, eczematous vesicles, lichen papules do not cause itching. In wheals produced by external irritants, for example insect bites, nettle, mechanical stimuli in factitious urticaria, itching always is felt before the appearance of the wheal. When the wheal has reached its maximum, the itching has subsided or disappeared. Wheals produced endogenously behave similarly. Pressure caused by the fluid exudate of wheals and other lesions does not activate the itch stimulus because there is no itching when indifferent fluids are introduced into the skin. In acute eczema, the itching is most intense during the development of the vesicles and abates when the edema of the epidermis is at its height. Prurigo nodules and lichen planus papules are frequently preceded by itching.

Itching is produced when substances are formed which irritate the nerve endings. These same substances proceed to activate inflammatory changes with the production of edema and objective lesions. When the lesions have been fully developed, the edema has diluted the itch-exciting substance causing diminution or cessation of the pruritus. It is the noxae that cause itching; not the resulting skin lesions.

8. VARIATION IN ITCH SENSITIVENESS

The fact that cutaneous lesions do not cause itching, however, does not mean that they do not affect itching. Variations in degree of itching may be influenced by many factors.

Clinically demonstrable changes can raise the itch excitability of affected areas. On eczematous skins, the itch stimulus is more intense, of longer duration and more widespread than on normal skins. Furthermore, inadequate stimuli, as the weakest needle-prick and subliminal touch-stimuli, which do not normally cause itching produce itching on eczematous skins. Ordinary stimuli of our environment usually passing unnoticed on normal skins, produce itching in abnormal skins. It is a common experience that itch excitability

is often raised in areas affected by urticaria or in wheals produced by insect bites long after the wheal has disappeared. The consequential scratching may or may not produce new wheals. All itching dermatoses exhibit this phenomena.

Variations in itch sensitiveness may also be psychically influenced. A phlegmatic individual usually shows a definite resistance to itch stimuli whereas a high-strung, excitable, easily-irritated person is frequently affected by stimuli far below that normally required to produce itching.

9. EFFECTS OF ENDOGENOUS NOXAE ON PRURITUS

Pruritus caused by endogenous chemical noxae is probably closely related to the same mechanism producing allergic manifestations. In fact, itching and raised itch excitability are characteristics of cutaneous allergic states. Possibly the changes in the nerve endings resulting in the pruritus are caused by locally formed products of sensitization reactions. This cannot be ascribed to the setting free of histamine or cholinergic chemicals as the injection of histamine and acetylcholine in the epidermis does not produce itching. As before stated, the ultimate and complete elucidation of pruritus will not be accomplished until further knowledge is determined concerning the exact processes of sensitization reactions and the interplay of the antigen-antibody mechanism in the body economy. Pruritus may be a component of these phenomena.

Endogenous noxae may be the result of malignant disease of internal organs. Itching commonly accompanies and frequently is the first diagnostic sign of internal cancer. It may be an expression of early reaction between skin tissue and tumor cells. Early itching is also seen in granuloma fungoides, leukemia and other blastomas.

Local pruritus often has a general cause. Pruritus involving the lower part of the abdomen is known in chronic appendicitis and is relieved by appendectomy. This may be produced by reflex nerve stimulation but may also be due to production of toxic substances. Persistent vulval pruritus not influenced by treatment sometimes completely disappears after cholecystectomy. Noxae produced by jaundice, diabetes mellitus, chronic interstitial nephritis, focal in-

fection, intestinal toxemia, drugs and articles of diet commonly cause pruritus.

Senile pruritus does not seem to be produced by chemical changes but probably follows an altered threshold of itch stimuli due to senile atrophy of cutaneous structures.

10. MENTAL INFLUENCES

Psychology has a definite bearing on the problem of pruritus. Conflicts that are not made conscious and thus rationally disposed of, are repressed into the unconscious. These energies are "bottled-up" and lead to abnormal manifestations in the mind (psychoneuroses) or affect disturbances in the body (conversions). Particular organs may be chosen for these conversion affections and resulting symptoms are termed psychogenic. The skin is a common conversion organ; in fact, it is perhaps the most common since it is the one of which the mind is most conscious. Physical energies have a close reciprocal connection with the vegetative system which has been grouped to include the autonomic nervous system and the hormonal apparatus.

Pruritus is frequently a phenomena of sensory neuroses. It may be purely psychogenic and independent of specific excitement of peripheral end-organs. For instance, when a finger is anesthetized, itching suggested by hypnosis will be just as intense in the anesthetized finger as in the opposite untreated finger.

Tension of concentration produces itching points in the skin probably by preparing the stage for pruriginous stimuli. The itching does not occur spontaneously but results in infinitesimal sensations as changes in temperature, movements of air, pressure of clothes and emotional waves acting on an already prepared skin. This is a common experience as when standing still on parade or in a photographic studio, boredom, fatigue, emotional tension, etc. At first the impulse to scratch can be abolished by conscious refusal. By repetition or when the skin has been pathologically altered, as in eczema, these impulses cannot be consciously resisted.

There is hardly any sensation of the skin that cannot under certain circumstances result from sexual neuroses. Acute itching attacks may resemble sexual orgasm. Itching is closely associated with sexual voluptuous sensation and at

times may be a substitute for unsatisfactory or absent coitus.

ADDENDUM

An attempt to correlate these factors which enter into the motivation of pruritus is impossible in the space and time allotted to this paper. Neither can an attempt be made to transfer this basic information to the symptomatology and therapeutics of pruritus. However, to indicate a clinical adaptation, an outline of those conditions which may cause and be accompanied by pruritus seems desirable. This outline is copied directly from Goldsmith².

I Dermatoses in which pruritus is of diagnostic importance.

- A. Pediculosis
- B. Scabies
- C. Grain-itch
- D. Erythema pernio (chillblains)
 - 1. Chillblain lupus (Hutchinson)
 - 2. Lupus pernio
 - 3. Erythrocyanosis
- E. Papular urticaria
- F. Prurigo
 - 1. Prurigo mitis
 - 2. Prurigo nodularis
- G. Neurodermatitis (Brocq) (Lichen simplex chronicus)
 - 1. Circumscribed
 - 2. Disseminated
- H. Fox-Fordyce Disease
- I. Dermatitis herpetiformis (Duhring)
- J. Granuloma fungoides
- K. Hodgkin's disease and leukemia

II Pruritus without or with preceding visible changes

- A. External causes
 - Baths, underclothing, changes in temperature, irritating dusts or vapors
- B. Metabolic causes
 - 1. Diabetes mellitus
 - 2. Jaundice
 - 3. Chronic interstitial nephritis
 - 4. Gout
- C. Focal Infections
 - 1. Cholecystitis
 - 2. Appendicitis
 - 3. Teeth, tonsils, sinuses
 - 4. Furunculosis, dermatomycosis, etc.
- D. Intestinal Toxemia

Abnormal flora, e.g., deficiency of B. Coli, excess of streptococci, nonlactose fermenters, etc.

E. Drugs and articles of diet

F. Allergy

G. Granuloma fungoides, Hodgkin's disease

H. Malignant disease

I. Psychogenic influences

J. Vulval and anal pruritus

K. Senile skin

REFERENCES

1. Goldsmith, W. Noel: Recent Advances in Dermatology, P. Blakiston's Sons & Co. (1936).
 2. Goldsmith, W. Noel: Significance and Treatment of Itching, *The Practitioner* 142:36, 1939.
 3. Wiggins, Carl J.: Physiology in Health and Disease, Lea & Febiger (1934).
 4. Myerson, Abraham: Human Autonomic Pharmacology — Theories and Results of Autonomic Drug Administration, *J. A.M.A.* 110:101, 1938.
 5. Macleod, J.M.H.: Diseases of the Skin, Second Issue, H. K. Lewis & Co. (1933).
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CHOICE AND DOSAGE OF CHEMOTHERAPEUTIC AGENTS FOR BACTERIAL INFECTIONS

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In the four years that have elapsed since sulfanilamide was introduced clinically as an effective therapeutic agent, there have evolved certain clinical concepts which allow us now to speak of what might be called principles of chemotherapy. Despite the fact that its mode of action is as yet not known; despite the fact that new experimental evidences of its effectiveness or ineffectiveness against different organisms is still accumulating; despite the fact that many new related compounds are constantly being prepared and tried; and even despite the fact that with added experience our notions concerning its rational use are constantly changing, we can at this time state these principles as they appear now and employ them in our present use of the drugs and in our future evaluation of

similar or related drugs. A discussion of these principles should consider the practical application of them to the following questions: When should a drug be given; which drug should be given; how should it be given; what should be expected from it both in terms of clinical response and toxicity from the drug?

When Should a Drug be Used? In considering the acute bacterial infections, this should be rather easily answered by saying that one should be used when there is a known or suspected infection due to one or several organisms against which the drugs are known to be effective, but even this would not go unchallenged. The question often is raised as to whether it is wise to give sulfanilamide in such an infection as an acute follicular tonsillitis in a child, which is so often self-limited and benign. Our feeling would be that in this, as in similar infections, in spite of their usual mildness, complications do develop frequently enough that the drug should be given early and in adequate dosages. It has been apparent to everyone that smaller dosages may suffice in these milder infections, but our preference is decidedly for the full dosage administered as early as possible and until the infection is well under control and then gradually diminishing dosages until the infection is eradicated. An interesting possibility suggests itself here. It is the general feeling of people working experimentally with the sulfanilamide group of drugs that their effect varies directly with the concentration of the drug and inversely with the number of organisms present. This would suggest the value of administering sulfanilamide prophylactically, for instance, to the intimate contacts of a child who has an acute hemolytic streptococcus infection of the upper respiratory tract. Clinically, protection against or abortion of such infections, particularly scarlet fever, by such a procedure has been suggested in the literature. However, the evaluation of this is, of course, extremely difficult. Although there is fairly good agreement concerning when these drugs should be used in the so-called medical conditions, in many cases of which, during the presulfanilamide days, the treatment was in large part symptomatic, in other conditions in which the earlier methods of treatment were more effective, there exists at present a great deal of uncertainty and controversy as to when drug treatment should be used. In general, surgical

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conditions differ not at all in these respects from other conditions except that the logic here is, if anything, more apparent. In many cases a localized infection is present, which, with surgical manipulation, can and is likely to spread, so that preoperative drug therapy is in a sense prophylactic, and is certainly as compared to medical cases, early drug treatment. A final word concerning the question of when should a drug be given should be said about those patients who have a disease which ordinarily would be considered one indicating drug therapy, but who have what some have considered contraindications to drug therapy. The question concerning the use of chemotherapy in the presence of two of these so-called contraindications arises not infrequently. One of these is whether a drug should be used when an acute infection coexists with an acute glomerulonephritis. Our feeling is that sulfanilamide, though not sulfapyridine, can be safely given in this instance, if lower dosages are employed and if the blood concentrations of the drug are carefully checked, since a decreased clearance of sulfanilamide may lead to unusually high blood levels. The second is whether the drugs should be used in an infection in which there is already a leukopenia from some other cause. Great care must be exercised here, but it is our feeling that if a severe infection is present, as is usually the case in such an instance, and it is an infection against which the drugs are known to be effective, that they should be cautiously used.

Which Drug Should be Used? Practically, at the present time, the choice of drugs is still limited to sulfanilamide and sulfapyridine. Sulfathiazol and sulfamethylthiazol are the two newcomers which bid for attention, and these appear to have a very real advantage over sulfapyridine in that they are as effective against at least as many organisms, although the results in staphylococcus infections have been disappointing, and they have materially reduced toxicity, particularly in regard to the amount of nausea and vomiting and the severity of the mental reactions. These have not been sufficiently studied, however, to evaluate them sufficiently. If we limit the choice of drugs then to sulfanilamide and sulfapyridine, we can, at the present time say this: the choice should depend primarily upon their respective effectiveness against the of-

fending organism. In general, we can say that sulfapyridine is of undoubted superiority primarily in infections due to the pneumococcus, and also in those due to the staphylococcus, streptococcus viridans and gonococcus. It is of equal effectiveness in infections due to the beta-hemolytic streptococcus, the meningococcus and the colon bacillus. Besides their effectiveness against the organisms, there are certain other factors which influence the choice of the drug to be used. These apply particularly to those infections due to organisms against which the two drugs are equally effective, and are primarily concerned with differences in their solubility, diffusibility and toxicity. Considering these, sulfanilamide is the drug of choice in such cases. It is more soluble which permits greater ease of parenteral administration, although the sodium salt of sulfapyridine can be employed. Sulfanilamide is more diffusible, which is particularly important wherever there is a localized collection of pus such as in the meninges, the pleural cavity, or an abscess cavity elsewhere, in which, with sulfanilamide, higher drug concentrations in relation to the blood concentration are obtained than with sulfapyridine. This is also of importance in infections of the urinary tract in which the effectiveness of the drug depends upon its concentration in the urine in the free form, and sulfanilamide is more regularly and more completely excreted into the urine and with a larger and more constant proportion in the free form. Finally, the choice of the drug must depend upon differences in their toxicity, and here, too, if the drugs are equally effective against the organism, sulfanilamide is the drug of choice, since sulfapyridine definitely causes more nausea and vomiting than does sulfanilamide, and sulfapyridine may also cause kidney lesions due to the precipitation of the acetyl derivative in the renal tubules and pelvis. Before leaving this subject, one very practical point should be made. This is that in an infection in which the offending organism is not immediately or readily obtained and identified, a situation obtaining not infrequently in infants and children, sulfapyridine should probably be considered the drug of choice at the beginning since it has what might be called a wider range of effectiveness. If later, the infection should prove to be due to an organism against which sulfanilamide is

equally effective, and it becomes the drug of choice for one of the other reasons mentioned, a change may be readily made.

How Should the Drug be Used? In considering how the drug should be used, the following points should be made: when should the drug be started; how much should be given; how should it be given; and how long should it be continued. I have mentioned before, that if it is decided to use chemotherapy, it is our feeling that the drug should be started as early in the course of the infection as possible, and in all active infections should be started in full dosages. This full dosage for infants and children for both sulfanilamide and sulfapyridine when given by mouth is calculated on the basis of 0.2 gram per kilogram or $1\frac{1}{2}$ grains per pound per 24 hours which is given in six divided doses. This dosage is continued until the infection is well under control as shown by a fall in temperature and general and local improvement of the patient. At this time, which, in the ordinary infection is from 24 to 48 hours, the dosage is reduced by one-half, and this is continued until all signs of the infection are eradicated. A corresponding dose for adults would be 90 grains during the first period and half this amount following. Following this scheme of dosage, which is somewhat more than usually recommended, particularly for the milder infections, the total intake of the drug is determined by the severity of the infection and the promptness of the response to drug treatment. In the more severe infections, the original dosage is continued for a longer period of time, and in these the parenteral administration of the drugs may be necessary. For this, sulfanilamide is given in a 0.8 per cent. solution, which can be given subcutaneously. The dosage here can be calculated on the basis of two daily injections of 0.1 gram per kilogram or $\frac{3}{4}$ grain per pound at each clysis. Sulfapyridine itself cannot be given parenterally because of its insolubility, but the soluble sodium salt may be given in the following dosages: it may be given intravenously in the form of a five per cent. solution of which 1 cc. per kilogram body weight is given. This obtains adequate blood concentrations, which, if the administration must be continued by this route could be repeated every eight to 12 hours. We have also been able to obtain and maintain adequate blood concentrations by the rectal administration of

sodium sulfapyridine, and recently a report has appeared in which it was given subcutaneously in a solution of 0.3 to 0.7 per cent. subcutaneously with no reaction although the pH of the solution is 10.4. Considerable difficulty is experienced in ascertaining in a given instance when the drug should be stopped. In the milder infections it is probably of less importance and is easier to decide, but in the severe infections, particularly in cases of meningitis, it is our feeling that it should be continued with care until all of the evidence by clinical, bacteriological, and other laboratory means points toward complete eradication of the infection.

Drug Toxicity: The toxic effects of both of these drugs are now quite well known, and have been rightfully thoroughly emphasized and I should like just to mention them. The less serious ones which do not indicate cessation of treatment are frequently seen and include nausea and vomiting, cyanosis, and mental disturbances. The more serious, partly in themselves, but more so because they often herald the occurrence of the most serious are drug fever and rash and except in the most serious infections do demand withdrawal of drug treatment. The most serious are those of disturbances in the red and white blood cells, and hepatitis. The one toxic effect which only sulfapyridine has is the occurrence of urinary concretions composed of the crystals of the acetyl derivative of the drug, which may produce hematuria, and in certain instances has been associated with evidences of nitrogen retention, decreased renal function, and even anuria with death. Keeping patients on the drug well hydrated apparently lessens the incidence of this occurrence. The one toxic effect which I should particularly like to clarify is the cyanosis, which is one of the most frequent observed. It is now agreed by most workers who have investigated the matter that the cyanosis following sulfanilamide administration in most cases is due to the accumulation of methemoglobin, and accordingly is associated with a corresponding reduction in the oxygen carrying capacity of the blood. What should be our attitude toward this very frequent occurrence? We feel that in the ordinary infection treated with the ordinary dosage of the drug the amount of methemoglobin accumulation is not of much consequence. There are, however, certain specific instances in which we feel that it is highly important to get rid of the methemo-

globin, which can be done quite readily and quite easily by the administration of methylene blue either by mouth or intravenously. These instances are as follows: in any infection when the cyanosis and methemoglobin accumulation has become excessive, and we have seen it accumulate to the extent of as much as 40 per cent. of the total pigment which means that 40 per cent. of the hemoglobin is not functioning: particularly important is it to prevent cyanosis in cases of pneumonia where anoxia already exists from another cause and where the patient's color is an important criterion of his condition; and, when sulfanilamide has been used preoperatively it is important to reconvert the methemoglobin to hemoglobin before a general anesthesia is administered. The accumulated methemoglobin can be reconverted to hemoglobin almost completely within the course of one half hour by the intravenous injection of methylene blue. Clinically, the rapid improvement in color of a severely cyanosed patient following the injection is quite dramatic. The dose of methylene blue which we employ for this is one cubic centimeter of a one per cent. solution per 10 kilograms or 22 pounds of body weight up to a maximum of 10 cc. which is given intravenously. Methylene blue by mouth in a dosage of one to three grains every four hours will prevent the occurrence of cyanosis if started simultaneously with the drug or if given following a single intravenous injection.

Much has been learned concerning these drugs in a comparatively short period of time. Infinitely more is to be learned, but the intelligent use of them throughout will depend upon a thorough knowledge of their effectiveness against infection and no less so of their toxicity to the patients.

DIAGNOSIS AND TREATMENT OF COMMON PERIPHERAL VASCULAR DISEASE OF THE LOWER EXTREMITIES

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Interest and progress in the treatment of peripheral vascular disease have increased markedly in recent years. The value of early

diagnosis has become apparent and cannot be emphasized too strongly. Preventive medicine may reach great heights in this disabling and too often fatal condition.

The purpose of this paper is to deal with the common types of peripheral vascular disease as seen by the general practitioner and in the general hospital. The most common and important conditions fall under two heads, i.e., arteriosclerosis obliterans, both diabetic and non-diabetic, and thrombo-angiitis obliterans or Buerger's disease. These two conditions are classified as organic obstructive diseases in contrast to those conditions due to vasomotor imbalance, such as Raynaud's disease, erythromelalgia, etc. For the sake of brevity these vasomotor conditions will not be considered.

One other very common condition may also be included, as it is often a complication of either of the above conditions, and at times occurs independently of arterial disease. This condition is acute embolic occlusion of peripheral vessels.

The diagnosis of peripheral vascular disease is based on definite symptoms and signs and depends primarily upon a careful history and physical examination. Numerous adjuncts to diagnosis will be discussed, but these should always remain so and never become substitutes.

Symptomatically, organic obliterative diseases of the lower extremities are very similar. In general, all the symptoms are due to curtailment of blood supply. The most important and most frequent symptom is pain or modifications of pain. Typically, this occurs during exercise, is relieved by rest and is the age-old syndrome known as "intermittent claudication." One must emphasize that this syndrome is a comparatively late symptom of the disease, found, as a rule, only in advanced cases, and can be usually considered pathognomonic of arterial obstruction.

Early in arterial disease the subjective symptoms vary a great deal. Numbness in the toes, a feeling of tiredness and weakness in feet, ankles and calves, may be all the patient experiences for a long time. Subjective coldness may be the only and most prominent symptom for some time. This may be present at all times, or, as is frequently the case, be noticed only at night, even in warm weather. Cessation of perspiration in the affected extremity may be the only symptom noticed at first.

As the disease advances, pain during exercise, relieved by rest, enters the picture. The amount of exercise necessary to produce this symptom gradually decreases and soon the patient begins to complain of pain at rest. Rest pain is of a different nature than that occurring with exercise. It is very severe, described most often as boring or shooting in nature, not unlike the lightning pains of *tabes dorsalis*. Rest pain occurs often only at night, depriving the patient of relaxation and sleep.

Lastly we have the severe agonizing pain seen in cases with ulceration and gangrene.

The physical examination of the extremities contributes most to the true evaluation as to the amount of circulatory deficiency and is concerned for the most part with the appearance, the temperature and palpation of the peripheral vessels.

The appearance of the extremities is very important and inspection should be thorough. Both extremities should be bare during the examination and should be compared. The skin in many instances is normal; though, if sufficient disturbance of the nutrition has occurred, it may be dry, thin and shiny. At times, muscular atrophy is present sufficient to be detected without measurement. There may be loss of hair on the dorsum of the feet and toes, and at times changes in the toe nails. Color changes occur and vary according to the extent of the circulatory insufficiency. Oftentimes, even in cases with moderate involvement, there may be no change in color in the horizontal position, while a definite rubor develops on dependent position. This rubor varies from an increase of the normal pink color to deep dusky red, tinged at times with a cyanotic hue. In advanced cases, intense cyanosis may persist even when the horizontal position is assumed. Cyanosis persisting after digital pressure gives as a rule a very poor prognosis as to chances of resuscitation.

In advanced cases, the foot may be very pale, almost cadaveric in appearance. Ulceration and gangrene occur in late cases and may be either "wet" or "dry."

Ischemia is perhaps the most important single objective sign in circulatory disturbances of the extremities. At times this ischemia is present in the horizontal position; if not, then will follow elevation of the extremity and forms the basis for a simple test as follows: both extremities are elevated to 45 degrees and the patient

rapidly flexes and extends the feet. Normally there is little if any deviation from the light pink color, while in cases of circulatory deficiency a more or less marked plantar ischemia occurs. This becomes very obvious if one extremity is normal, thereby giving a good comparison. The degree of involvement may be roughly gauged by the time element in appearance of the ischemia.

Surface temperature changes are important and at times sufficiently marked to be detected by the examiner's palm. The palm should be passed from above downward along the extremities, noticing any sudden change or gradual change, and the two extremities compared. Changes as slight as one degree may be detected by some trained hands. A difference in the levels of temperature changes in one extremity as compared with the other is of more importance than equal coldness in both extremities.

Palpation of the peripheral vessels offers a fair and simple criterion of circulation in the extremities. One, however, must be careful of many chances for error. Anatomical anomalies, in which the vessels are out of their normal position, marked subcutaneous fat, or a weak myocardium will often be the causes for failure to palpate the vessels.

Palpation is done at four sites. The femoral is palpated below the middle of Poupart's ligament, the popliteal in the popliteal triangle, the posterior tibial below the internal malleolus and the dorsal pedal on the dorsum of the foot.

As we have stated before, many mechanical adjuncts have been developed to aid in the detection of circulatory disturbance. These must always remain adjuncts and take a secondary place to a careful examination with the eye and hand.

The use of the histamine reaction, oscillometer and skin thermometer are the few to be discussed here.

Injection of histamine phosphate, 1-1000 solution, intradermally reveals the status of the superficial circulation. Injection is made intradermally and in, as a rule, four specified areas: the dorsum of the foot, just above the ankle, at the level of the tibial tubercle and just above the knee. The typical reaction is the development of a flare similar to the wheal of urticaria, with pseudopodia and at times a bluish ring at the periphery. In the presence of insufficient

superficial circulation, there is absorption of the injected solution without the development of any flare, or only a small flare without pseudopods.

The oscillometer is a comparatively recent instrument developed for accurate measurement of the amplitude of peripheral pulsation. The instrument consists of an adjustable cuff which may be inflated, and two indicating dials. One dial records the pressure in the rubber cuff in centimeters of mercury, and the other records the rhythmic variations in pulsation over a scale graduated in centimeters of water.

The oscillometer gives one the pulsation index and the status of the deep circulation in the extremities. The value of this test lies in a comparative study of both extremities, as there are great normal variations in different patients. The normal oscillometric curve is peaked, whereas in arterial disease there is a definite flattening to complete obliteration of this curve. Recent work has increased the accuracy of this instrument by comparing the index of the upper and lower extremities at similar levels. The normal ratio of pulsation is 1-2 and, as the vessels of the upper extremity are much less frequently involved, one factor in this ratio remains fairly constant. Disturbance of this normal 1-2 ratio is then more accurate than comparison of the lower extremities alone, especially if depression of the index is equal in both. Even with this new work, use of the oscillometer must at all times be considered only as an adjunct to careful examination, as it is not fool-proof.

Use of the skin thermometer at times gives information as to mild changes in circulation. Here again, many factors must be considered. Examination should be made only after exposure of both extremities to room temperature for twenty to thirty minutes. Detection of vasospastic elements in conjunction with organic obliterative disease may be made by recording the skin temperature before and after peripheral nerve block or after immersion of the upper extremities in warm water for ten to fifteen minutes. The temperature readings are as a rule toe temperatures.

Differential diagnosis between these two conditions has to do mainly with the age of the patient and the duration of the symptoms. The patients with arteriosclerosis are as a rule elderly and have had symptoms usually for weeks or months, while those suffering with thrombo-

angiitis obliterans are as a rule under forty-five years of age and give a history of symptoms over a period of years. Thrombo-angiitis obliterans is limited almost entirely to the male, reports of the condition in the female being rare and even questioned by many authors. The early development of arteriosclerosis in the diabetic must be considered, as here we see patients forty-five years or younger. Racial differences are marked in the two conditions, as the great majority of cases, though not all, of thrombo-angiitis obliterans occur in the Hebrew race, while arteriosclerosis obliterans is no respecter of race. Development of a migratory phlebitis which is superficial and not accompanied by any fever or leukocytosis occurs in approximately 30 per cent. of the cases of thrombo-angiitis obliterans and never in arteriosclerosis.

Pathologically there is a great difference in the two conditions. While arteriosclerosis obliterans involves the arteries alone, thrombo-angiitis obliterans involves either the artery or vein and usually both. The condition is one of degeneration in arteriosclerosis obliterans, and involves either the intima or, as in Mönckeberg's sclerosis, the media, while thrombo-angiitis obliterans is considered inflammatory in nature.

The treatment of these conditions with their complications of severe pain and gangrene may be divided into two types, namely, conservative and radical, conservative treatment being stressed here. The treatment in either condition is to a great extent identical, varying only to a slight degree.

Treatment of the uncomplicated case is as a rule ambulatory and its active part rests entirely with the patient. The seriousness of the condition must be stressed and in many instances the patient must early change his mode of living. The general care of the patient and his extremities is of prime importance. All general complicating conditions such as diabetes must be rigidly cared for. Tobacco in all its forms should be eliminated, if the patient is one addicted to its use. Conclusive evidence has been presented by many authors to show the deleterious vasospastic effect of nicotine. Care of the feet and legs is essential and should be thorough. Well fitting roomy shoes should be advocated, and at times linings of sheep skin used, especially where the individual leads an outdoor life. The patient must be warned as

to injury of the feet and should be counseled to consult his physician for even the most trivial injury, as this may precipitate gangrene. Bed socks are of value, being much safer than heating pads so often used. Daily sitz baths are advantageous and constitute a simple method of increasing peripheral circulation.

The aim of all treatment is to aid and hasten the development of collateral circulation. For the most part this treatment is mechanical.

Medication is used to some extent and consists of vaso-dilator drugs, of which the best and most generally used is phenobarbital-theobromine compound, grains vii ss, three times daily. Hypertonic salt solution 3-5 per cent. intravenously is used in amounts varying from 100 to 250 cc. every other day. Typhoid vaccine is given intravenously beginning with small doses and gradually increasing to just below the dose causing generalized reaction and this dosage continued once or twice a week.

Mechanical treatment varies from postural exercises requiring no apparatus to a motor tilting bed developed recently.

Postural exercises have a definite place in the uncomplicated case, but should not be used in cases with ulceration or gangrene or if pain follows. The act of elevating the extremities, flexing the ankles, etc., uses some of the vital oxygen in cases of gangrene. These exercises as to time element vary for each patient. The patient should lie flat on his back in bed and elevate the legs to 45 degrees. The ankles should be flexed and extended rapidly, the time consumed for blanching and emptying of all the veins noted. This is recorded, averaging as a rule two minutes, and is the standard time for elevation in that particular patient. The position is now changed so that both legs hang over the side of the bed in the sitting position and the time necessary for the appearance of rubor noted, being an average of three minutes. The third position is one of recumbency and should be the total of the first two phases of treatment. The three phases constitute one cycle of treatment and should be repeated four to five times in succession, twice to three times daily.

Passive venous hyperemia instituted with a special cuff of ordinary sphygmomanometer is by far the simplest and most effective of all. With the limbs horizontal, the cuff is placed at mid-thigh and inflated to 70 to 80 mg. in average

cases. The time for the appearance of rubor and distention of veins is noted and used as standard, two minutes being average. Elevation with the cuff released for one minute and recumbency for twice elevation and distention constitute a cycle as in postural exercises. Three to four cycles twice to three times daily are sufficient.

The Pavex machine fills and empties the vessels of the extremity by vacuum and pressure, but is expensive and no more effective than the above treatment.

All the above can be carried out and the patient continue his or her daily work. In cases complicated by ulceration, gangrene or severe pain, other factors enter into the treatment. Absolute bed rest preferably in the hospital is essential. The position in bed should not be absolutely horizontal, but the circulation should be slowed somewhat by elevating the head of the bed two to three inches. Cessation of tobacco is even more necessary now than ever, and can mean the difference between success and failure. The severe pain oftentimes is relieved by bed rest alone; if not, injection of 1 to 5 cc. of de-insulinized pancreatic extract as a rule will be effective. As a last resort, peripheral nerve block or section may be necessary.

The traditional heat cradle should be discarded and the heat of the limb preserved by wrapping in layers of wool or cotton. With the heat cradle two major objections arise. First, likelihood of injury, *due to the patient striking his extremity against the cradle*. Secondly, the abnormal amount of heat present. In tissues deprived of their circulation, the normal hyperemia which occurs in response to heat to cool the part is not present, and further destruction ensues.

Postural exercises are contraindicated in the treatment of these complicated cases, but the cuff, pavex or tilting bed are of great aid to healing and preventing extension of the tissue destruction. Hypertonic salt solution, 3-5 per cent. daily is of great value. There is a mild generalized reaction of weakness with this solution and it must be used cautiously in arteriosclerotics.

Cases of dry gangrene should be kept so if possible, dry dressings and wrappings of cotton or wool being used. In infected gangrene, wet dressings either of boric or chloramine may be used. Separating tissue may be gradually teased loose and removed.

Acute embolical occlusion presents an absolute emergency. Here again, we may divide treatment into conservative and radical. Radical treatment consists of embolectomy, which in the hands of some has been very successful, but is difficult in the main, due to exact location of the embolus. Conservative treatment must also be early treatment. Papaverine HCL, gr. $\frac{1}{2}$ intravenously, within the first three to four hours after the occlusion overcomes the secondary vasospasm. Oral doses, gr. $\frac{1}{2}$, should follow at intervals of two hours.

There is no thought here of holding out a panacea and discarding surgery, but an attempt has been made to show the value of early diagnosis and conservative treatment. The social and economic status of the patient influences treatment here as elsewhere in medicine and at times amputation and early return to work is best. On the other hand, most of the treatment may be carried out in the patient's home if necessary.

If surgery is resorted to, it should be radical, amputation being done well above the gangrenous area, and not piecemeal around the infected or gangrenous areas.

With hard work and cooperation by both patient and doctor, often limbs can be saved and used, rather than confined to jars in pathological laboratories.

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NITROGEN THERAPY IN SCHIZOPHRENIA

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Since the introduction of the newer therapies of schizophrenia, many investigators have studied the manner in which the agents employed act on the organism, in order to establish a rational basis for the treatment of functional psychosis. At the present time the anoxia theory is in the foreground, because a state of anoxia is present in all the shock therapies.

Weil¹ and his co-workers pointed out that most of the changes observed in the ganglion cells after experimental hyperinsulinism are probably due to an intracellular anoxia. Gellhorn² found that in insulin, metrazol, dauer-

schlaff, sodium cyanide and carbon dioxide therapies a depression of the oxidative processes in the brain is common to all. During hypoglycemic shock therapy the normal brain metabolism is disturbed and depressed due to the lack of oxidative substances.

Holmes³ and Wortis⁴ showed that the oxygen consumption of sliced brain tissue parallels the concentration of the dextrose in the medium. In the administration of metrazol therapy it is quite evident to the observer that a state of anoxia is being produced which is especially marked at the end of the epileptiform seizure. According to Himwich⁵ and his collaborators the oxygen tension in the arterial blood falls rapidly during a metrazol convulsion and a relative anoxia prevails for a period of time.

Inhibition or depression of oxidation in the brain by barbiturates and sodium cyanide was pointed out by Quastel and Wheatley⁶, Jowet and Quastel⁷. It is evident, therefore, that these therapies which seem to be of some benefit in schizophrenia produce a relative state of anoxia. According to Gellhorn², the shock therapies produce a more severe anoxia than those previously employed. The same author states that the probable therapeutic factor of metrazol therapy is a stimulation of the sympathetic nervous system. Such a stimulation was shown by him⁸ experimentally on the nictitating membrane of the cat, and clinically by Heilbrunn and Liebert⁹ by the increase of adrenalin output during the various stages of insulin and metrazol therapy. If the anoxia really is the necessary condition which must be produced in order to obtain beneficial results in functional psychosis, it is evident that this might be produced by a less strenuous and less hazardous method than metrazol or insulin. For this reason, Himwich¹⁰ brought about a state of anoxia by the inhalation of pure nitrogen at the expense of oxygen. This author reported favorable results in schizophrenic patients with this form of therapy, while other clinics could not confirm his findings. (Fraser and Reitmann¹¹)

Therapy with pure nitrogen inhalation was instituted at Elgin in order to compare the results of this form of treatment with those obtained with metrazol and insulin. This is a preliminary study of 11 cases treated.

Method: Pure nitrogen gas is inhaled by the patient with the aid of an ordinary McKesson

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and Robbins gas machine; this apparatus has a tight fitting mask to which an exhalation valve is attached. The exhaled gas is freed from carbon dioxide by soda lime which is connected in series with a breathing bag. Unconsciousness usually intervenes within $1\frac{1}{2}$ to 2 minutes without excitation or distress. The period of anoxia is extended until oposthotonos and myoclonic twitchings occur. At this point the pupils are markedly dilated and there is a cyanosis of the face. The anoxia is then rapidly interrupted by the administration of pure oxygen; recovery is rapid and the patient is in contact within ten to fifteen seconds. Treatment was given three times a week for a total of fifteen treatments.

Materials: Altogether 11 cases of schizophrenia were treated; eight of these were of relatively recent onset; overt psychotic symptoms were noted for not more than six months. The remaining three patients had displayed psychotic symptoms for 12, 14, and 36 months. They were all classified by the staff as dementia praecox; four of them were of the catatonic type, three paranoid, and four undetermined. None had had previous therapy. The ages ranged from 22 to 37, and all were males.

Results: No untoward effects of the treatment were noted; there were no fractures or deaths; none of the patients objected to the treatment; this being in contrast to emotional reactions experienced during metrazol treatment. On the contrary they showed heightened mood and some euphoria immediately following the treatment. Also they became more talkative after the treatment which was especially noted in a mute catatonic. After each anoxic state, he talked freely for a period of several minutes and this period extended even longer with each successive treatment. In spite of the fact that all patients showed some response to the treatment, only one made a complete remission. This patient was 36 years of age, on admission was resistive, at times appeared perplexed; he displayed a lack of interest in his surroundings, usually sat off by himself, lacked spontaneity, and had shown symptoms for three years prior to admission to the hospital. With each treatment he showed some improvement and after fifteen treatments had been given, no overt psychotic symptoms were noted; he had good insight, and at the present time is home on parole. According to his family, he continues

to get along well; in fact, they say he is better now than at any time previous to his illness. Besides this one patient, we did not have any recoveries or marked remissions. Eight others have completed the treatment, of whom six are considerably improved; that is, they are now making a better institutional adjustment and no longer express delusional ideas. However, they still display a typical residue seen so often in schizophrenics; namely, a lack of interest, no ready spontaneity and no insight. Two were not benefitted by the treatments and two who have received nine treatments are considered to be improved. Therapy in these two cases is still in progress.

During the period of anoxia and shortly thereafter some physiological changes have been noted; marked dilatation of the pupils, an increase in blood pressure, especially systolic — on the average of 60 mm. of mercury — while the diastolic did not increase to the same extent. The pulse frequency was markedly increased and ranged between 100 and 120 shortly after the treatment. Respiration also showed an increase up to 30 and 34. All this is evidence of a marked stimulation of the sympathetic nervous system and severe anoxia.

Comment: It can be seen from our results that the remissions obtained with nitrogen are not so frequent as those treated with insulin hypoglycemia and metrazol. In spite of the fact that the cases treated were recent in onset, only one patient was able to leave the institution. However, it is possible that a longer treatment with more frequent application may improve the remission rate. We are somewhat reluctant for the sake of the patient to extend this form of therapy, which is still in the experimental stage, for too long a time, because we might expect remissions with insulin if the psychosis of the patient is of fairly recent origin. However, there is no doubt but that psychotic behavior can be influenced by the anoxic state produced by nitrogen inhalation as evidenced by the quick responses in our heretofore mute patients and by the subjective expressions of well-being. Unfortunately this period of improvement is of very short duration, not even as long lasting as is sometimes seen after metrazol convulsions. We therefore hesitate to recommend this treatment in the form now used.

Theoretically the lucid interval after the

anoxic period is of great interest, since it shows that the patient can be aroused by a marked stimulation of the sympathetic nervous system.

Many authors claim that dementia praecox is a disorder of the autonomic nervous system. Many observations indicate that patient respond inadequately and insufficiently to stimuli. Singer¹², Hoskins¹³, Cannon¹⁴. However, it seems rather questionable whether or not a stimulation of the sympathetic nervous system alone is sufficient in itself to produce lasting remissions since the failure or inadequacy of the response cannot be removed by stimulation alone without re-organization of the biological person. We have tried nitrogen therapy, and are continuing its use chiefly because we hope to gain a better understanding of the other therapies which give better results at the present time, and not because we believe that nitrogen inhalation, as used now, will replace them.

SUMMARY AND CONCLUSIONS

1. Eleven cases of schizophrenia were treated by the production of anoxia with nitrogen. One patient made a good remission; six showed a better institutional adjustment with no evidence of delusional ideas at the present time, though without insight. Two did not benefit by the treatment; while still in two others, treatment had not been finished.

2. A state of anoxia produced by inhalation of nitrogen is followed by a short lucid interval.

3. At the present time more frequent application of the therapy is recommended only for investigative purposes.

BIBLIOGRAPHY

1. Weil, A., Liebert, E. and Heilbrunn, G.: Histopathologic Changes in the Brain in Experimental Hyperinsulinism, *Arch. Neurol. & Psychiat.* 39: 467, 1938.
2. Gellhorn, E.: Effects of Hypoglycemia and Anoxia on the Central Nervous System; *Arch. Neurol. & Psychiat.* 40: 125, 1938.
3. Holmes, E.: Oxidations in Central and Peripheral Nervous Tissue; *Biochem. J.* 24: 914, 1930.
4. Wortis, S. B.: Respiratory Metabolism of Excised Brain Tissue, II. The Effects of Some Drugs on Brain Oxidations, *Arch. Neurol. & Psychiat.* 33: 1022, 1935.
5. Himwich, H. E., Bowman, K. M., Fazekas, J. F. and Orenstein, L.L.: Effect of Metrazol Convulsions on Brain Metabolism, *Proc. Soc. Exper. Biol. & Med.* 37: 359, 1937.
6. Quastel, J. H. and Wheatley, A. H.: Narcosis and Oxidations of the Brain, *Proc. Roy. Soc., London, s.b.* 112: 60, 1932.
7. Jowett, M., and Quastel, J. H.: The Effect of Narcotics on Tissue Oxidations, *Biochem. J.* 31: 565, 1937.
8. Gellhorn, E., and Darrow, C.: Unpublished Observations.
9. Heilbrunn, G. and Liebert, E.: Observations on the Adrenal Level in the Blood Serum During Insulin Hypoglycemia and After Metrazol Convulsions; *Endocrinology*, 25: 354-358, 1939.

10. Himwich, H. E. et al, The Effect of Anoxia Produced by Breathing Nitrogen, on the Course of Schizophrenia, *Proc. Soc. Exper. Biol. & Med.*, 39: 367, 1938.

11. Fraser, R. and Reitmann, F.: A Clinical Study of the Effects of Short Periods of Severe Anoxia with Special Reference to the Mechanism of Action of Cardiazol "Shock", *J. of Neurol. & Psychiat.* 2: 125, 1939.

12. Singer, H. D.: Psychosis and the Central Autonomic Nervous System, *J. A. M. A.* 110: 2048, 1938.

13. Hoskins, R. G.: Oxygen Metabolism in Schizophrenia, *Arch. Neurol. & Psychiat.* 38: 1261, 1937.

14. Cannon, W. B.: Bodily Changes in Pain, Hunger, Fear and Rage, ed. 2, New York, D. Appleton and Company, 1929.

Dr. I. Finkelman, Chicago: I was very much interested in this good piece of work. By listening to Dr. Lengyel I tried to make some mental notes. The Chairman introduced this subject as shock therapy. We have already insulin, metrazol, cyanides, electric convulsions, and various other methods of shock therapy. I am not trying to be facetious, but it is interesting that we can get an historical perspective of shock therapy. In 1854 Ray treated patient with ether jags, and that may be similar to the use of nitrogen. In 1855 Tyler used shock therapy and said that in order to treat the fundamental disease one has to produce a shock on the nervous system, and he did that. He did not have our advantages but produced it by causing emesis with ipecac and antimony and causing continuous catharsis with calomine, jalap, salts and senna, at the same time putting blisters on the patient's back. The oldest psychiatrists knew of the lowering of patients into pits with snakes, just near enough to produce a shock; or there was the custom of lowering the patient's head in water for some time. Rush used a gyrator to cause anoxia by sending the blood from the head to the extremities by rapidly centrifuging the body.

It is interesting that in nitrogen therapy of schizophrenia there is first unconsciousness and then later mild clonic twitches. It is not the anoxia that produces the mild convulsions. It is the toxic products that are formed. When the circulation is released, the toxic products go to the brain and there are produced convulsions. It is not the electric current but the toxic products that causes convulsions.

I want to touch upon the theory propounded by Gellhorn. He concluded that since insulin and metrazol caused an anoxia and since anoxia stimulates the sympathetic nervous system and since you get remissions by this process, therefore there is a disturbance in the autonomic nervous system. That may or may not be so, but the evidence that is brought forth is of very indirect nature. We think in dementia praecox there is a disturbance of the autonomic nervous system. But, as Lengyel has said, by stimulating this system you do not get remissions. To the physiologist a case of schizophrenia is not unlike that of diphtheria or pneumonia. The psychiatrist has a different conception of this problem. You might conclude that in depressions there is a disturbance of the autonomic nervous system because metrazol causes remissions.

That may or may not be so, but we should have direct evidence for that.

I should like to say that if after nitrogen therapy the patient is happy, why not try that form of treatment on depressions; those are the patients you want to make happy and jovial.

THE CONTINUOUS ALTERNATING SCHEME OF TREATMENT IN THE CONTROL OF ACQUIRED SYPHILIS

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Aware of the potential value of the arsphenamines, the physician in general practice has long desired a tested, effective routine for using them. He has wanted a scheme of treatment with which he could confidently assure his patient a chance of recovery but which would not require a life-long period of treatment-observation. Every physician has seen syphilitic lesions disappear almost before his eyes. He has observed the arsenical compounds reverse the blood reaction within the first month or two of treatment. But he should always remember that a little treatment is not enough. Too often the patient has seemed to be entirely cured, when suddenly in the prime of life he is stricken down by an aneurism or by general paralysis. How long should treatment be continued? When is it safe to permit the patient to begin a rest period?

In 1928, the Health Organization of the League of Nations began an investigation into the effectiveness of treatment schemes for syphilis used in several countries. Stokes, the American consultant to the League group, has commented upon the difficulties in making this international investigation. They arise from diversity in therapeutic theory and practice, drugs, and clinical and serologic technique, as well as from the almost insurmountable obstacles of language and distance which hinder free consultation and discussion. Believing that data from the clinics of the United States would be somewhat easier to evaluate because of uniformity in several important particulars, five clinics in this country pooled their records and experience and, with the aid of the U. S. Public Health Service, began a joint study of their treatment methods.

RELATIONSHIP OF TREATMENT TO CONTROL

These studies, which became known as the Co-operative Clinical Group investigations of the treatment of syphilis, proved that the control of early syphilis depends upon adequate and continuous treatment. Within 24 hours after the first injection of arsphenamine, the spirochete is gone from the early lesion. The lesion itself disappears within five to ten days. Continued treatment prevents subsequent mucocutaneous (communicable) relapse. Finally, uninterrupted, protective treatment will forestall the late manifestations of the disease — heart, nerve and bone syphilis.

The critical time in the prevention of mucocutaneous (communicable) relapse seems to come between the 15th and 19th injection of arsphenamine. This being so, community health is usually protected by 20 injections of arsphenamine with an equal number of injections of heavy metal for the patient with early syphilis. A similar critical time for forestalling neuroprogression and other late manifestations seems to come after additional treatment — from the 21st to the 29th injection of arsphenamine. The patient's welfare demands, therefore, that at least 30 injections of arsphenamine plus at least an equal amount of heavy metal be administered. If such treatment is given to protect the patient against future relapse or progression, good public health work is done at the same time.

DESCRIPTION OF THE CONTINUOUS-ALTERNATING SCHEME

The continuous-alternating scheme of treatment for early acquired syphilis which was found to be the most efficacious through the Co-operative Clinical Group investigations may be defined as follows:

1. Treatment is continuous. No rest periods from treatment are permitted during the first year.
2. Courses of an arsenical compound and a heavy metal are administered alternately, beginning with the arsenical compound and ending with the heavy metal.
3. The optimum requirements are at least 30 injections of arsphenamine and 40 of bismuth, given within 15 months.
4. Treatment should be continued for at least one year after disappearance of all significant signs and symptoms of the disease.

OTHER TREATMENT SCHEMES

In addition to continuous treatment as described above, other widely used treatment schedules may be roughly divided into three groups. The American intermittent scheme permits authorized periods of rest extending for one month or longer after the first or second course of treatment. An adequate intermittent schedule includes at least 30 arsphenamine injections plus an appropriate amount of heavy metal within 21 months' time. It should be pointed out that the Danish and British intermittent schedules which were analyzed in the League studies more closely resemble the American continuous scheme than the American intermittent scheme.

The intensive scheme of treatment is based on the old Schultz-Pollitzer schedule. It is characterized by brief courses and massive doses of arsphenamine early in treatment with long intervening courses of heavy metal. Finally, irregular treatment is any method which apparently follows no set schedule. The most common pattern of irregular treatment is established by the non-cooperative patient.

INFLUENCE OF SCHEME AND AMOUNT OF TREATMENT ON THE COURSE OF SYPHILIS

The Cooperative Clinical Group studies permit us to measure individually the influence of scheme and amount of treatment upon various types of relapse and progression. Mucocutaneous (communicable) relapse is likely to occur from three to 13 times more frequently under other schemes of treatment than under continuous therapy (table I). A rest in treatment of more than one month during the first year will increase the likelihood of mucocutaneous relapse by four times. At the time of the first discussion of treatment with the patient, it is necessary to impress upon him the importance of faithful attendance. Irregularity in treatment for early syphilis should be avoided at all costs.

Admissions of patients with neurosyphilis to mental institutions may be charged either to no treatment at all or to inadequate or irregular treatment during an earlier stage of the disease. Simple arithmetic proves that it is cheaper to prevent involvement of the central nervous system than to pay for later institutional care. This is one of the potent arguments that has led to widespread public and legislative approval of the venereal disease control program.

Continuous treatment is 50 per cent more effective in reducing the occurrence of neurorelapse and progression than other schemes. There seems to be little significant difference in the chance for clinical progression to cardiovascular and late skin or bone manifestations of the disease, between the continuous, intermittent and intensive schemes of treatment. Irregularity in treatment, however, increases the chance for such progression at least four-fold.

The second treatment factor in the control of acquired syphilis is the amount of treatment (table 2). The tendency toward mucocutaneous (communicable) relapse is reduced at least seven times in patients receiving 20 or more arsenical injections with interim heavy metal over those receiving less than this amount. The tendency toward persistent positive serologic tests is reduced by 40 per cent in patients receiving this protective therapy.

The Cooperative Clinical Group studies show that the arsphenamines have a definite effect in preventing neurosyphilis, since with patients receiving less than 20 doses there is three times as much chance that neurosyphilis will develop as with patients receiving more than this amount. Furthermore, we have seen that the scheme of treatment is a very important factor in reducing incidence of neurorelapse. Irregularity must be avoided.

The difficulty in testing treatment methods for syphilis lies in the insidious nature of the disease, which in turn demands extended periods of observation. Cases, however, are available from the Cooperative Clinical Group material which have received adequate and continuous therapy and at the same time have been under treatment-observation from two to ten years. The results shown for adequate continuous treatment — that is, at least 30 injections of an arsenical compound and accompanying heavy metal within 15 months — indicate maximum efficacy (table 3). These results are contrasted with those from adequate intermittent and from irregular treatment in patients observed for the same length of time.

Because of recent developments in serologic technique the two to ten year case records have been divided into those patients treated before 1930 and those treated after that year. Comparison of serologic results between earlier and later groups of patients under treatment for one year or longer indicates that there is from two

to three times as great a tendency toward serologic relapse or resistant serologic tests with present-day technics as with those in use a decade or more ago.

It should be pointed out that many of the patients with resistant serologic tests had a history of early central nervous system involvement as indicated by abnormal spinal fluid at the beginning of treatment. In all except three instances this abnormality disappeared under adequate routine chemotherapy.

In terms of clinical relapse there is no significant difference between pre-1930 and post-1930 groups. The irreducible minimum number of clinical relapses seems to be about one relapsing patient for every 40 patients treated.

Even adequate intermittent therapy doubles the chance for clinical relapse as compared to the adequate continuous-alternating scheme, while irregularly treated patients observed for the same period show five times as many clinical relapses.

The fact that only five out of 315 patients given adequate continuous treatment developed any form of mucocutaneous (communicable) relapse is remarkable evidence that the present-day control of syphilis lies in proper treatment.

THE NEED FOR EARLY TREATMENT AND COOPERATION OF THE PRIVATE PHYSICIAN

If therapy is begun in the secondary stage of syphilis, the patient has already passed through the extremely communicable primary stage of the disease in which 100 per cent are infectious. Each week of delay in beginning treatment in the primary stage increases the probability of spreading syphilis. Conversely, each week of treatment begun during the primary stage results in more effective control and isolation of the infection.

From 50 to 80 per cent of untreated primary cases develop communicable secondary symptoms. When primary patients are placed under adequate continuous alternating treatment immediately, the chance of infectious relapse can be reduced to about 1.5 per cent.

Treatment begun during the primary stage also offers a more favorable prognosis for the patient than treatment begun during the secondary stage (table 4). In comparing the ultimate

outcome for patients treated in the various stages of early syphilis, we find that the probability of progression and relapse rises in proportion to the duration of infection. Of 3,244 patients, serologic relapse occurred in 6 per cent of those placed under treatment in the sero-negative primary stage, in 10 per cent of those in the sero-positive primary stage and in 11 per cent of those with secondary syphilis. The trend of clinical relapse, neuroprogression, and the tendency toward serologic fastness is similar. In other words, the chance for recovery seems inversely proportional to the duration of infection at the time treatment is begun. From every standpoint treatment should be started as soon as the diagnosis can be established.

Application of the treatment method to control, cannot of course, begin until the patient presents himself to his physician. Unfortunately, the patient does not come in for treatment at the first sign of syphilis. Fewer than ten per cent of persons infected go to their physician at all during the primary stage. Of those who do, less than half come for treatment within the first five weeks after the appearance of the chancre. As many as seven per cent of patients who eventually go to their doctor wait three months or more before becoming sufficiently concerned about the persistence of the sore to seek medical advice. During this period of communicability the patient, unaware of his condition, may repeatedly expose his sexual partner to the disease.

It has often been demonstrated that more early syphilis is seen by the private practitioner than by the specialist in the syphilis clinic. Patients do not go to their doctor with a diagnosis of syphilis already made. They go because of a persistent sore or falling hair or a skin rash. The physician must recognize the syphilitic infection. *He* must know that syphilis masquerades in many forms, and *he* must always suspect syphilis until it is definitely ruled out. The darkfield examination and the routine serologic blood test are of the greatest aid to the physician in general practice. With early diagnosis and protective, continuous treatment the patient suffering with syphilis has better than a ten to one chance for recovery while the community is protected at the same time from spread of the disease. Herein lies the secret of the control of syphilis.

TABLE 1

Influence of scheme of treatment upon tendency for clinical relapse of 3,244 cases of early syphilis.

Scheme of Treatment	Total Patients	Resistant serology or serologic relapse		Muco-cutaneous relapse		Neuro-relapse		Other late relapse	
		No.	%	No.	%	No.	%	No.	%
Continuous	1,502	209	13.9	46	3.1	266	17.7	38	2.5
Intermittent	1,165	605	51.9	142	12.2	306	26.3	21	1.8
Irregular	444	405	91.2	176	39.6	125	28.2	41	9.2
Intensive	133	63	47.4	12	9.0	54	40.6	1	0.8
TOTAL	3,244	1,282	39.4	376	11.6	751	23.2	101	3.1

Note: Totals above include all patients treated under given scheme of treatment without regard to adequacy of treatment or length of observation period at conclusion of treatment.

TABLE 2

Influence of amount of arsphenamine treatment upon tendency for clinical relapse in 2,889 cases of early syphilis with more than six months' treatment.

Amount of Arsphenamine	Total Patients	Resistant serology or relapse		Muco-cutaneous relapse		Neuro-relapse		Other late relapse	
		No.	%	No.	%	No.	%	No.	%
Little	1,793	558	31.1	266	14.8	170	9.5	82	4.6
Much	1,096	210	19.1	22	2.0	37	3.4	19	1.7
TOTAL	2,889	768	26.6	288	10.0	207	7.2	101	3.5

Note: "Little" indicates 1-19 injections of arsphenamine; "much" indicates 20 or more injections.

TABLE 3

Influence of adequate treatment upon tendency for relapse in 1,816 cases of early syphilis observed from 2 to 10 years.

Scheme of Treatment	Total Patients	Serologic relapse		Muco-cutaneous relapse		Neuro-relapse		Other late relapse	
		No.	%	No.	%	No.	%	No.	%
Treated before 1930:									
Adequate									
Continuous	143	11	7.7	2	1.4	—	—	—	—
Adequate In-									
termittent	142	12	8.5	4	2.8	1	1.7	1	1.7
Irregular	1,209	160	13.2	60	5.0	79	6.5	39	3.2

Treated after 1930:									
Adequate									
Continuous	172	39	22.7	3	1.7	3	1.7	2	1.2
Adequate In-									
termittent	57	17	29.8	3	5.3	1	1.8	—	—
Irregular	93	41	44.1	8	8.6	2	2.2	1	1.1

TABLE 4

Influence of stage of syphilis during which treatment began upon tendency for relapse at conclusion of treatment, in 3,244 cases of early syphilis.

Stage of early syphilis during which treatment began	Total Patients	Clinical Relapse except							
		Serologic relapse		Neuro-relapse		Neuro-relapse		Resistant Serology	
		No.	%	No.	%	No.	%	No.	%
Seronegative									
Primary	342	22	6.4	9	2.6	6	1.8	9	2.6
Seropositive									
Primary	585	58	9.9	16	2.7	23	3.9	41	7.0
Secondary (first year)	2,252	242	10.7	65	2.9	98	4.4	176	7.8
Secondary (delayed)	65	7	10.8	3	4.6	5	7.7	9	13.8
TOTAL	3,244	329	10.1	93	2.9	132	4.1	235	7.2

DISCUSSION

G. G. Gaylor, M.D., Chicago: Dr. Vonderlehr has very clearly shown that the best results from treatment of acquired syphilis may be expected from the continuous alternating plan. Actual experience with this method in a large clinic has convinced me that it offers the best possible results, with fewer reactions, in the average case of early syphilis, provided the treatment can be made really continuous.

No treatment can be continuous without the co-operation of the patient. To obtain the required co-operation, the patient must be made to understand the nature of his disease, the danger of exposing others in the early stages, and as a result of a relapse, the necessity for uninterrupted and prolonged treatment, and the serious consequences which may befall him in later life as a result of neglect and indifference in the first year of his treatment.

The confidential nature of venereal disease records and reports should be made clear to him. He should understand that so long as he continues to follow the advice of his medical adviser, he is nothing more than a number to the health authorities. The patient's complete confidence is essential to complete cooperation.

The physician must interest himself in the well-being of the patient in order to secure his confidence. Properly kept records, frequent tests, thorough examinations and good technique in treatment all help to inspire confidence.

Altruism is a marvelous virtue, but it doesn't pay the cost of living — the physician must charge for his services. Common sense will tell him that his fee must be commensurate with the patient's ability to pay if treatment is to be continuous.

Having secured the patient's confidence, having impressed upon him the seriousness of his illness, even though the symptoms have all disappeared, having reversed his positive serology, either because it is our custom or for some other reason, we decide the patient needs a rest period of a month. The patient concludes that his illness is not so serious as it was supposed to be, and perhaps the month becomes three or four months so that when he does come back, his serology has become positive and, equally unfortunate, he is now an indifferent patient. If he avoids a relapse, he has an excellent chance to become serologically "fast," which nearly always leads to loss of confidence in his medical adviser if not in all treatment. One actual case presents a good illustration of what may be expected from injudicious rest periods:

Patient started treatment in July, 1938.

Diagnosis: Syphilis, primary. Seropositive.

Had treatment twice weekly during the first six months and weekly thereafter. At the end of one year, he had had repeated negative Kahn tests after the third month of treatment, and had received a total of 28 injections of neoarsphenamine and 45 of bismuth salicylate in oil.

A spinal puncture at that time proved completely negative. He continued uninterruptedly until he re-

ceived eight more injections of neoarsphenamine and one of bismuth, when a three-month rest period was ordered, at the conclusion of which he received a Kahn test, the result of which was positive. Unfortunately, the clinician ordered another three-month rest period without waiting for the laboratory report. At the end of the first month the patient returned with a maculopapular eruption on the body, including palms and soles.

Progression diagnosis: relapsing secondaries.

Prognosis for cure: poor.

Such a case presents a strong argument for continuous (uninterrupted) treatment. It is well known that in a small percentage of cases relapse does occur, even after the best of treatment but, if the complete routine is given, the physician at least has a clear conscience.

Examinations required by the Illinois Marriage law have brought to light many cases of serologically-fast syphilis with a history of interrupted or discontinued treatment years ago.

Aside from carelessness or indifference on the part of the patient or his physician, drug reactions constitute the most important factor in causing interruptions in treatment.

Jarish-Herxheimer reactions are to be expected in florid cases. Most of them can be avoided.

Nitritoid reactions may not be entirely avoided, but the careful clinician will be able to detect the advance warning and stop his injection in time to prevent the severe type.

Mild skin reactions are of frequent occurrence, and should be regarded as danger signals. Dermatitis exfoliativa occurs far too frequently.

Severe skin reactions due to the careless administration of bismuth are far more frequent than generally believed.

Jaundice and even acute yellow atrophy may be avoided in most instances by the regular use of the icterus index.

All patients, receiving bismuth particularly, should have regular dental care. Unlimited laboratory service is also essential to the safe treatment of syphilis under any plan.

Reactions occasion not only interrupted treatment; they result in loss of confidence on the part of the patient. Complete physical examinations and frequent reexaminations, with regular laboratory check-up, will reduce severe reactions to a minimum and tend to promote continuous treatment.

All things considered, if a cure is the objective, as it is in all cases not too far advanced, the continuous alternating plan of treatment seems to be the safest and best.

518 Deming Place.

A scientist says it is the lower part of the face, not the eyes, that gives away one's thoughts. Especially when one opens the lower part of the face.—*Montreal Star*.

UNDULANT FEVER

Yesteryear—Infrequently recognized as a disease of humans.

Today—Now readily recognized and can be diagnosed by a specific blood test.

—Courtesy of W. F. Prior Company, Inc.
Fulton County Medical Society Bulletin.

The modern records of phenomenal prolificacy indicate almost no instances of multiple births exceeding six (sextuplets). In older writings there is mention by credible authors of the simultaneous birth of from seven to fifteen fetuses. Pare cites in a case of an Italian mother who bore twenty children in two confinements, nine on the first occasion and the second time, eleven.

—*Medical Bulletin*.

Apropos the family doctor—"With a few questions, a snappy physical examination, he recognizes an attack of erysipelas or measles or acute cardiac failure. . . . He agrees with Mackenzie that, when one wishes a flat tire fixed, one resents the advice of the garage man that a thorough overhauling of the car is necessary."—*Herrick*.

"What shall I do?" wailed the sweet young thing. "I am engaged to a man who just simply cannot bear children."

"Well," remarked the kindly old lady, "you musn't expect too much of a husband."—*Nebraska State Journal*.

Boy: "Do you know, dad, that in some parts of Africa a man doesn't know his wife until he marries her?"

Dad: "Why single out Africa?"

Surgeons were greatly surprised to find a bolt, nut and washer in the brain of a Michigan man. It must have been their first experience in opening up a politician's head.—*Neb. State Jour. of Med.*

Hungry persons drive fast and dangerously, says a doctor. Also those who are no longer thirsty.—*Tampa Tribune*.

News of the State OGLE COUNTY

Ogle County Medical Society held a meeting November 19, 1940 at the Spoor Hotel, Oregon, Illinois.

Election of officers: Dr. G. S. Henderson, Holcomb, President; Dr. Du Mont, Mt. Morris, Vice President; Dr. Bogue, Rochelle, Secretary and Treasurer; Dr. Kennedy, Rochelle, Censor-3 years.

Dr. C. Spencer Bond, Rochelle was voted a membership in the Society.

Harry Leichenger, M. D., assistant Professor of Pediatrics, University of Illinois College of Medicine gave a very instructive lecture on Poliomyelitis.

Dr. Ernest Breed gave a short talk and a motion

picture on the Radium Treatment of Birth marks.

Sincerely yours,

A. R. Bogue,
Secy. Ogle Co. Medical.

SOUTH SIDE MEDICAL ASSEMBLY

The South Side Medical Assembly will meet again this coming year, February 19, 1941 at the Shoreland Hotel. At this coming meeting all seven of the South Side Branches will participate to make it a bigger and better meeting. The Chicago Medical Society which normally meets on that date will cancel it's meeting downtown in order to hold their meeting in conjunction with the South Side Medical Assembly. Surgical Clinics will again be held at various hospitals and this will be announced at some time in the very near future. Work has been progressing very satisfactorily towards making the Assembly a most successful meeting. Mark the date in your appointment book now *FEBRUARY 19, 1941, Shoreland Hotel.*

COMING MEETINGS

- January 3 — Will Grundy County — Louis Joliet Hotel, Joliet — 12:00 noon — Dr. Harry B. Mock — "Skull Fractures."
- January 7 — Vermilion County — Hotel Wolford, Danville, 6:30 P. M. Dr. Jerome R. Head — "Lung Abscess."
- January 8 — Clinton County — Truesdail Hotel, Carlyle — 12:30 Noon Dr. E. Lee Dorsett, St. Louis — "Vaginitis in Pregnancy."
- January 8 — Beardstown Hospital — Beardstown — Dr. Fred M. Meixner — "Respiratory Infections."
- January 8 — McDonough County — Macomb — Evening — Program on Syphilis — including Motion Picture "Syphilis, A Motion Picture Clinic."
- January 10 — Greene-Jersey County — Evening
- January 10 — Will Grundy County — Louis Joliet Hotel, Joliet — 12:00 noon — Dr. John S. Coulter — "Uses and Abuses of Physical Therapy."
- January 14 — Lake County Medical Society — Abbott Laboratories, North Chicago — Evening — Dr. B. Barker Beeson — "Treatment of Syphilis in the Adult."
- January 14 — Effingham County — Benwood Hotel, Effingham — 6:30 P. M. — Dr. F. E. Seneat — "The Treatment of Common Skin Disorders."
- January 14 — Alexander County — St. Mary's Hospital, Cairo — 8:00 P. M. — Dr. Franklin Corper — "Urinary Tract Infections & Nephritis."
- January 14 — Kankakee County — Hotel Kankakee, Kankakee — 12:00 noon — Dr. Charles Newberger — "Forceps Delivery — Indications, Contra-indications, and Technique."
- January 14 — Bureau County — St. Margaret's Hospital, Spring Valley — 6:30 P. M. Dr. A. Verbrugghen — "Neurology in General Practice."
- January 14 — St. Francis Hospital, Peoria — 8:00

P. M. Dr. William Harcourt Brown — "Prolonged Labor."

January 16 — Stephenson County — Freeport — Dinner at 6:30 P. M. Dr. Frederick W. Slobe — "Low Back Injuries."

January 17 — Will-Grundy County — Louis Joliet Hotel, Joliet — 12:00 noon — Dr. Harold M. Camp.

January 21 — Rock Island — Moline Public Hospital, Moline — 8:00 P. M. Dr. Eugene Cary — "Management of Prolonged Labor."

January 24 — Saline County — City Hall, Harrisburg — 8:00 P. M. — Dr. H. Close Hesseltine — "Diagnostic Pitfalls of Pyuria and Fever in the Obstetrical Patient."

January 24 — Will-Grundy County — Louis Joliet Hotel, Joliet — 12:00 Noon Dr. John R. Neal — "Medical Legislation."

February 4 — Vermilion County — Hotel Wolford, Danville — 6:30 P. M. Dr. Horace W. Soper of St. Louis — "Gastroenterology for the General Practitioner."

February 4 — Williamson County — Herrin Hotel, Herrin — 8:00 P. M. — Dr. Irving F. Stein — "Version and Forceps."

February 7 — Bond County — Thomas Hotel, Greenville — 7:00 P. M. — Dr. W. A. Malcolm — "Vanishing Toxemias of Pregnancy."

February 7 — Madison County — 2:00 P. M. (place not decided) Dr. William J. Pickett — "Ruptured Appendix."

February 11 — Kankakee County — Hotel Kankakee, Kankakee, 12:00 noon — Dr. R. E. Black — "Heart Disease in Children."

Marriages

ERNEST DE WITT RICHARD PONZER to Miss Elizabeth Parkin, both of Chicago, September 21.

WILLIAM EDWARD STEINER, Savanna, Ill., to Miss Marie Melanie Kolbus of Chicago in September.

Personals

The Chicago Gynecological Society was addressed, November 15, among others, by Drs. Milton H. Adelman and Benjamin B. Lennon on "Pituitrin Shock."

Dr. John Alexander, Ann Arbor, addressed a joint meeting of the Chicago Tuberculosis Society and the Illinois chapter of the American College of Chest Physicians, November 18, on "Management of Bronchiectasis."

Dr. Franklin G. Ebaugh, professor of psychiatry, University of Colorado School of Medicine, Denver, addressed a public meeting spon-

sored by the Chicago Medical Society in cooperation with the Chicago Pediatric and Neurological societies, December 11, at the Chicago Woman's Club. His subject will be "Your Mental Health."

The Chicago Council of Medical Women was addressed, November 13, by Drs. Mila I. Pierce, Evanston, on "Infections of the Newborn;" Louise O. Kappes, Evanston, "Allergy in Children," and Willie Mae Clifton, "Dietary Treatment of Phosphorus Retention in Renal Insufficiency."

The Chicago Urological Society was addressed, November 28, by Drs. Joseph H. Kiefer on "Tumors of the Testicle: Hormone Determinations in Diagnosis and Management;" Gustav Kolischer, "The Irritable Bladder," and Fay H. Squire, "Deep Roentgen Therapy in Elusive Ulcer of the Bladder: An Analysis of Twenty-Five Treated Cases."

The Chicago Laryngological and Otolological Society was addressed, December 2, by Drs. Elmer W. Hagens on "Otosclerosis in Identical Twins" (case report) and Stuart C. Cullen, Iowa City, "Anesthesia in Otolaryngology."

The Des Moines Academy of Medicine and the Polk County Medical Society was addressed, November 20, by Drs. James Barrett Brown, St. Louis, on "Traumatic Surgery" and Andrew C. Ivy, Chicago, "Relation of Physiology to Modern Medicine."

Dr. Max Thorek addressed the Staff of St. Margaret's Hospital, Hammond, Indiana, December 3rd on "Electrosurgical Obliteration of the Gallbladder as a Means of Reducing Mortality" (Report of 1,044 cases).

Dr. Clifford J. Barborka gave a Post-graduate Lecture at Marshalltown, Iowa, December 3, 1940, for the Iowa State Medical Society. His subject was Vitamin Deficiency — Its Symptoms and Treatment.

Dr. W. W. Bauer addressed the doctors of Will-Grundy County Medical Society on the subject, "Health Education and the Medical Profession," at their noon meeting December 13.

Dr. Henry Buxbaum was the guest speaker at a meeting of the Knox County Medical Society the evening of December 10, speaking on "Indications of Therapy of Non-Obstetric Complication of Pregnancy."

Dr. Charles H. Phifer spoke to the doctors of the Madison County Medical Society, Alton, on

December 7, at their Annual Meeting. He talked on "Medical Economics."

Dr. Michael Mason addressed the doctors of the Lake County Medical Society December 10 on the subject, "Surgery of the Hand."

Dr. William C. Beek gave a paper on "Differential Diagnosis and Treatment of Acute Abdominal Lesions" before the Fulton County Medical Society at Canton December 19.

The Chicago Society of Anesthetists elected the following officers for the coming year: President, W. H. Cassels; Vice-President Alice McNeal; Secretary-Treasurer, Rose Engel.

Dr. Robert S. Berghoff spoke over radio Station WJJD the morning of December 19, 1940, on the subject "You and Your Heart."

The following officers of the Institute of Medicine of Chicago for 1941 were elected by the Board of Governors, as follows: Honorary Chairman, Ludvig Hektoen; Chairman, William F. Petersen; President, Rollin T. Woodyatt; Vice-President, Edwin W. Ryerson; Secretary, George H. Coleman; Treasurer, Grant H. Laing.

News Notes

—A gift of \$50,000 from Miss Edith L. Patterson, Sterling, Ill., as additional endowment for the Patterson cancer clinic at Passavant Hospital, Northwestern University, was recently announced.

—Dr. John de J. Pemberton, Rochester, Minn., discussed "Indications for Splenectomy and the Results of Operation" before the North Side Branch of the Chicago Medical Society, November 7. Dr. Albert M. Snell, Rochester, addressed the Evanston Branch, November 7, on "Recent Studies on Deficiency States and Vitamin Therapy" and Dr. Charles B. Puestow, "Relation of Vitamins to Surgery."

—Northwestern University has received \$635,000 from the estate of the late Dr. John S. Appleman, it is reported; \$135,000 is restricted to use of the medical school clinics. Announcement has also been made of a gift of \$162,000 from the Clara A. Abbott trust for advancement of medical, chemical and surgical science. Mrs. Abbott, widow of Dr. Wallace C. Abbott, founder of the Abbott Laboratories in North Chicago, previously had given the university \$1,500,000 for similar purposes.

—Northwestern University Medical School wish-

es to announce that the Mayo Lecture for 1940 will be delivered by Dr. Stuart W. Harrington on the subject of "Diaphragmatic Hernia," on Monday, February 10, 1941, at 1:00 P.M., in the Library of the Medical School at 303 East Chicago Avenue. All physicians are invited to attend.

—The Madison County Medical Society will be host at a postgraduate conference arranged by the state medical society for physicians in the sixth district in Alton, December 4. The following program will be presented by Chicago physicians:

Dr. Henry Close Hesseltine, Newer Endocrines in Obstetrics.

Dr. Lowell D. Snorf, Diagnosis and Treatment of Functional Disorders of the Colon.

Dr. Clifford J. Barborka, Medical Management of Gallbladder Disease.

Dr. Wilber E. Post, Arthritis.

Dr. Hillier L. Baker, Potential Inguinal Hernia with Special Reference to Direct Hernia.

Dr. Archibald L. Hoyne, Scarlet Fever.

Dr. Arno B. Luckhardt, Academic or Unsuccessful Research.

Dr. Warren H. Cole, Hyperthyroidism.

—The Sangamon County Medical Society held a joint meeting with the District Medical Society of Central Illinois at St. John's Hospital in Springfield, November 7. Participating in the program were:

Dr. Sidney O. Levinson, Chicago, Serum Transfusions or Blood Transfusions?

Dr. Frederick A. Jostes, St. Louis, Manipulative Treatment of Backache.

Dr. Louis H. Jorstad, St. Louis, Surgery or Radiation in Cancer of Skin and Mouth.

Dr. Ralph H. Major, Kansas City, Mo., Changing Picture of Therapy in Pneumonia.

Dr. Thomas D. Masters, Springfield, Chronic Peripheral Artery Disease.

Dr. Robert J. Patton, Springfield, Endometrioma of Sigmoid with Obstruction.

Dr. Henry S. Dickerman Jr., Springfield, The Thyroid Heart.

—The Graduate School of the University of Illinois has established four research fellowships to be awarded for one year in the fields of medicine and dentistry in Chicago at a stipend of

\$1,200 a year (calendar year with one month's vacation). Fellows are eligible for reappointment in competition with the new applicants. Candidates for these fellowships must have completed a training of not less than eight years beyond high school graduation. This training may have been acquired in any one of the following ways, or the equivalent thereof:

1. Work leading to the B.S. and M.D. degrees (in some instances the candidates would have the M.D. degree, or an additional year or two of hospital training beyond the intern year).

2. Work leading to the B.S., M.S. and D.D.S. degrees.

3. Work leading to the B.S. or B.A. degree in a four year collegiate course and to the D.D.S. degree.

4. Work leading to the B.S., D.D.S. and M.D. degrees.

Candidates should indicate the field of research in which they are interested and submit complete transcripts of their scholastic credits, together with the names of three former science teachers as references. March 1 is the deadline for acceptance of applications. Announcement of the fellowship awards will be made April 1, becoming effective September 1. Formal application blanks may be secured from the Secretary of the Committee on Graduate Work in Medicine and Dentistry, 1853 West Polk Street, Chicago.

—The Chicago Tumor Institute has issued a report of its activities for its first two years. Of 904 patients observed, 613 patients had cancerous lesions, while 301 had benign tumors, inflammatory lesions and other noncancerous conditions. It is of special significance, says the report, that of the 613 cancer patients 262, or 42.7 per cent, had far advanced cancers, and it is sad to reflect that the greater number were cases of accessible forms of cancer easily curable in early stages. Of the total number of patients, 622 were residents of Chicago, 140 came from cities in Illinois outside of Chicago, 130 from twenty-four other states and 12 from six foreign countries. Procedures carried out included 13,269 examinations, 8,846 roentgen diagnoses, 7,756 roentgen treatments, 4,132 radium treatments, 184 minor surgical procedures, seventy-eight surgical procedures, and the making of 278 photographs and lantern slides. An attempt is being made to pursue a five year follow-up of

all cancer patients treated at the institute and in the group of 904 observed only 1 patient remained untraced at the end of the first two years. Every patient who was treated has been traced. "Cancerphobia" is attributed to 34 patients of the 904 who came to the institute because of fear they were suffering from cancer. The disease was not found in any of this group. Seventeen, or 50 per cent, are classified as having general phobias, and of the remainder one third referred their complaints to the breast, one third to the mouth and one third to the gastrointestinal and genitourinary systems. In the first two years, two courses have been held and instruction has been given to forty-nine qualified radiologists, thirty-six from the United States and thirteen from foreign countries. Eighty physicians from thirty foreign countries visited the institute to study its organization and equipment and consult with the staff on various phases of the cancer problem. The institute was opened in March 1938 and the report covers the period ended March 31, 1940.

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Deaths

WILLIAM EDWARD BARTON, Bethalto, Ill.; Barnes Medical College, St. Louis, 1909; formerly health officer of Wood River; aged 60; died, October 15, in Roxana of carcinoma of the stomach.

CHARLES HENRY BEADLES, Oglesby, Ill.; Rush Medical College, Chicago, 1890; aged 73; died, October 2, in the Peoples Hospital, Peru.

JAMES ROSSER BEDFORD, Dahinda, Ill.; Rush Medical College, Chicago, 1881; Civil War veteran; aged 94; died, October 19, in Oneida of cerebral hemorrhage and pneumonia.

RICHARD W. CARTER, Chicago; Fort Wayne (Ind.) College of Medicine, 1893; aged 70; died, October 25, of chronic myocarditis.

CARL V. CRUSE, Iola, Ill.; Barnes Medical College, St. Louis, 1899; member of the Illinois State Medical Society; aged 67; died, October 12, of cardiorenal disease and arteriosclerosis.

ROBERT EUGENE FORSTER, Chicago; Magyar Királyi Erzsébet Tudományegyetem Orvostudományi, Pecs, Hungary, 1923; aged 40; was found dead, October

30, of poison, self administered.

WILLIAM HENRY HOLMES, Chicago; Northwestern University Medical School, Chicago, 1910; a Fellow, A.M.A.; professor of medicine at his alma mater; member of the Central Society for Clinical Research; served during the World War; on the staffs of the Wesley Memorial Hospital and the Passavant Memorial Hospital; author of a book entitled "Infectious Diseases;" aged 53; died, November 2, in Ann Arbor, Mich., of pulmonary and cerebral abscesses.

MORGAN BIDDLE JENNINGS, Streator, Ill.; Rush Medical College, Chicago, 1886; aged 77; died, November 16, in St. Mary's Hospital.

HENRY R. KRASNOW, Chicago; Chicago College of Medicine and Surgery, 1914; instructor of dermatology at the University of Illinois College of Medicine; aged 57; on the staffs of the Research and Educational Hospital and the American Hospital, where he died, October 31, of coronary thrombosis.

FREDERICK A. LUCE, Cicero, Ill.; College of Physicians and Surgeons of Chicago, 1892; aged 84; died, October 2.

CHARLES FREDERICK ROAN, Chicago; a Fellow A.M.A., University of Illinois College of Medicine, Chicago, 1928; on the staffs of the Augustana and the Lutheran Deaconess Hospitals; aged 41; died, October 12, of coronary thrombosis.

RAYMOND EUGENE ROBINSON, Chicago; University Medical College of Kansas City, Mo., 1913; served during the World War; aged 50; died, October 2, of pulmonary embolism.

JOSEPH A. ROTH, Chicago; Harvey Medical College, Chicago, 1905; aged 66; died, October 14, of diabetes mellitus.

JONAS RUBY, Chicago; Chicago College of Medicine and Surgery, 1917; for many years school health officer; aged 54; died, October 21, in the American Hospital of coronary occlusion.

ISAAC HOLLEN TAYLOR, Springfield, Ill.; Rush Medical College, Chicago, 1871; aged 90; died, September 27, of coronary occlusion and arteriosclerosis.

HARRY WILLARD WATEROUS, Galva, Ill.; Rush Medical College, Chicago, 1885; member of the Illinois State Medical Society; aged 81; died, October 24, in East Pepperell, Mass., of coronary occlusion.

MARION G. WILBUR, Chicago; Medical College of the State of South Carolina, Charleston, 1902; member of the Illinois State Medical Society; aged 68; died, October 8.

CHARLOTTE MARGARETHA SEKLER KOESTER, Chicago; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1907; aged 69; died, October 2, of pancreatitis.

FREDERICK WOLTMANN, Kampsville, Ill.; Hahnemann Medical College and Hospital, Chicago, 1903; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1905; member of the Illinois State Medical Society; served during the World War; aged 64; died, October 7, in the Veterans Administration Facility, Jefferson Barracks, Mo., of melanotic sarcoma.

The swaddled infant pictured at right is one of the famous works in terra cotta exquisitely modeled by the fifteenth century Italian sculptor, Andrea della Robbia. In that day infants were bandaged from birth to preserve the symmetry of their bodies, but still the gibbous spine and distorted limbs of severe rickets often made their appearance.



A bambino from the Foundling Hospital, Florence, Italy,—A. della Robbia

Glisson, writing in 1671, described an ingenious use of swaddling bands — “first crossing the Brest and coming under the Armpits, then about the Head and under the Chin and then receiving the hands by two handles, so that it is a pleasure to see the Child hanging pendulous in the Air . . . This kind of Exercise . . . helpeth to restore the crooked Bones. . . .”

STRAPPED FOR RICKETS

SWADDLING was practised down through the centuries, from Biblical times to Glisson's day, in the vain hope that it would prevent the deformities of rickets. Even in sunny Italy swaddling was a prevailing custom, recommended by that early pediatrician, Soranus of Ephesus, who discoursed on “Why the Majority of Roman Children are Distorted.”

“This is observed to happen more in the neighborhood of Rome than in other places,” he wrote. “If no one oversees the infant's movements, his limbs do in the generality of cases become twisted. . . . Hence, when he first begins to sit he must be propped by swathings of bandages. . . . Hundreds of years later swaddling was still prevalent in Italy, as attested by the sculptures of the della Robbias and

their contemporaries. For infants who were strong Glisson suggested placing “Leaden Shooes” on their feet and suspending them with swaddling bands in mid-air.

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dosage, Oleum Percomorphum is especially suitable for young and premature infants, who are most susceptible to rickets. Derived from natural sources, this product is rich in vitamins A and D. Important also to your patients, Oleum Percomorphum is an economical antiricketic.

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*Proc. Soc. Exp. Bio. and Med., 1934, 32, 241-245

**Laryngoscope, 1935, XLV, No. 2, 149-154



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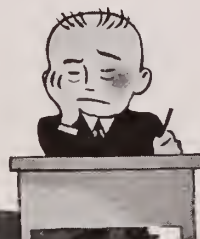
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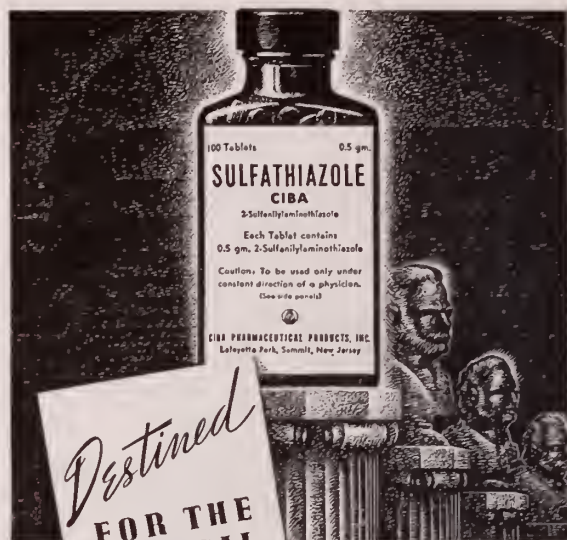
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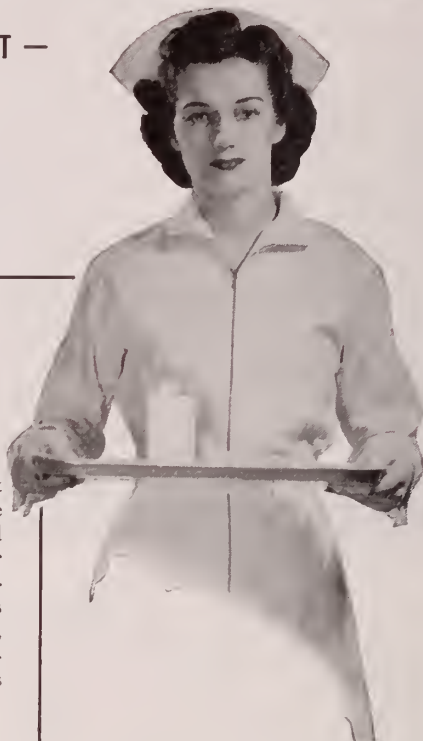
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The Preface which appropriately describes the traditional functions of The Merck Manual and shows how this edition conforms with the important developments in the progress of medicine during the past six years.

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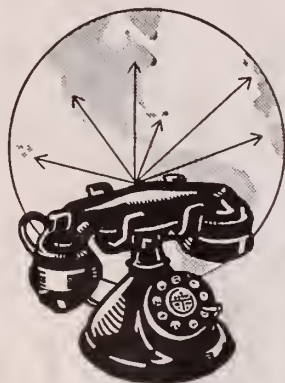
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ANNUAL MEETING ILLINOIS STATE MEDICAL SOCIETY, CHICAGO, MAY 20, 21, 22, 1941

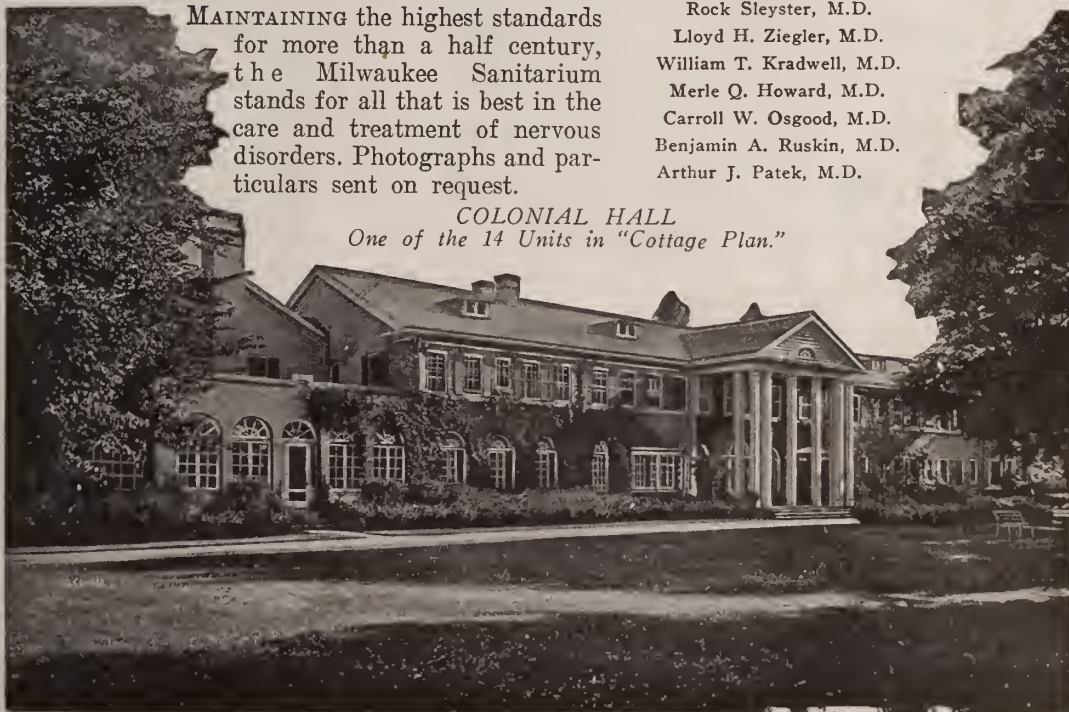
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Arthur J. Patek, M.D.

COLONIAL HALL
One of the 14 Units in "Cottage Plan."



R_x

Wyeth's BEWON ELIXIR

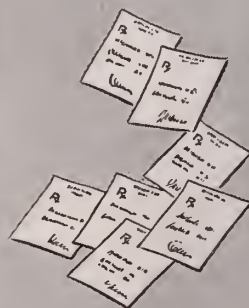
A Vehicle that Stimulates the Appetite

Wyeth's BEWON ELIXIR is an excellent vehicle for many medicaments. It is compatible with most drugs.

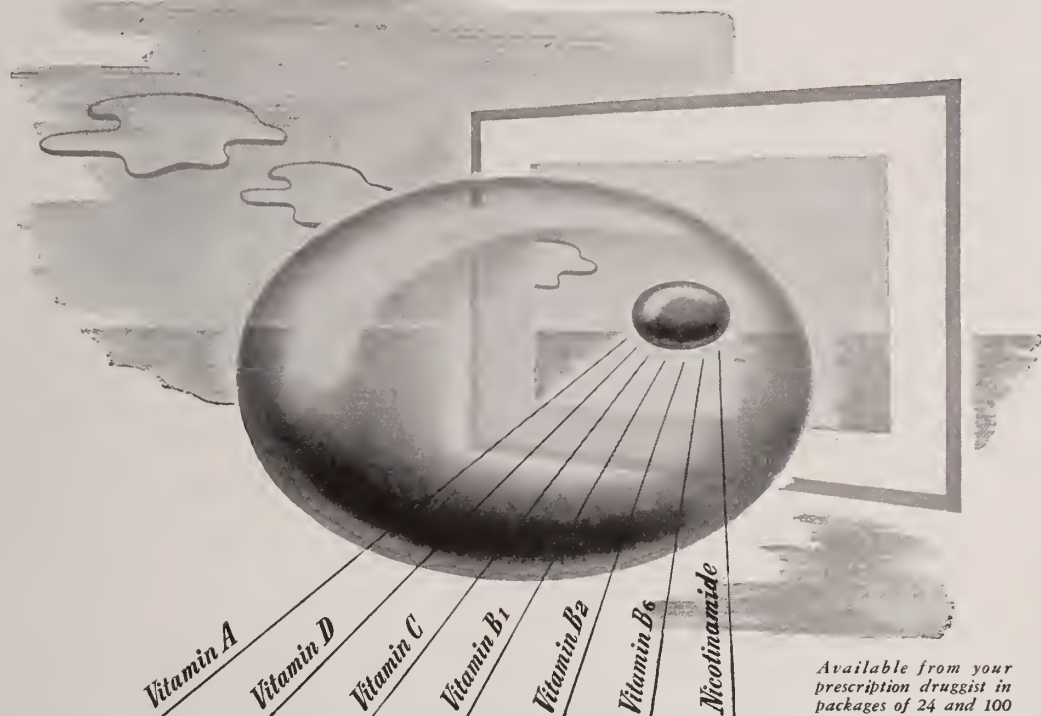
Standardized to contain 500 International Units of Vitamin B₁ (thiamin chloride) per ounce, BEWON ELIXIR stimulates the appetite and is indicated in Vitamin B₁ deficiencies.

Supplied in Pint and Gallon bottles

JOHN WYETH & BROTHER
INCORPORATED • PHILADELPHIA, PA.



NOW *Unicap* Vitamins*



Available from your
prescription druggist in
packages of 24 and 100

ONE CAPSULE MEDICATION

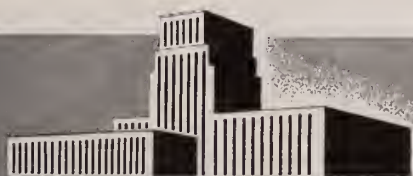
*Convenient for the Physician
Economical for the Patient*

Vitamin A, . . . 10,000 U.S.P. units
Vitamin D, . . . 1,000 U.S.P. units
Vitamin C, . . . 500 International units
(25 mg. ascorbic acid)
Vitamin B₁, . . . 500 International units
Vitamin B₂, (G) . . . 200 gammas
Vitamin B₆, . . . 200 gammas
Nicotinamide, . . . 20 milligrams

With Unicap Vitamins, you can prescribe, *in one capsule*, the fat-soluble vitamins—the vitamins of the B complex group, and vitamin C.

Only one Unicap a day is necessary to fortify the average diet, thus making for convenience to the physician and economy to the patient. Taken regularly in the morning, a Unicap Vitamin capsule soon becomes a part of the patient's daily routine.

*Trademark



Upjohn
KALAMAZOO MICHIGAN

* *Fine Pharmaceuticals Since 1886* *



Petrolagar*...for the

Treatment of Constipation



● Petrolagar Plain, is a bland emulsion of high grade mineral oil. It helps to soften the feces and promotes the formation of an easily passed stool.

Petrolagar Plain helps maintain regular bowel movement without the use of harsh laxatives.

Suggested dosage:

Adults—Tablespoonful morning and night as required

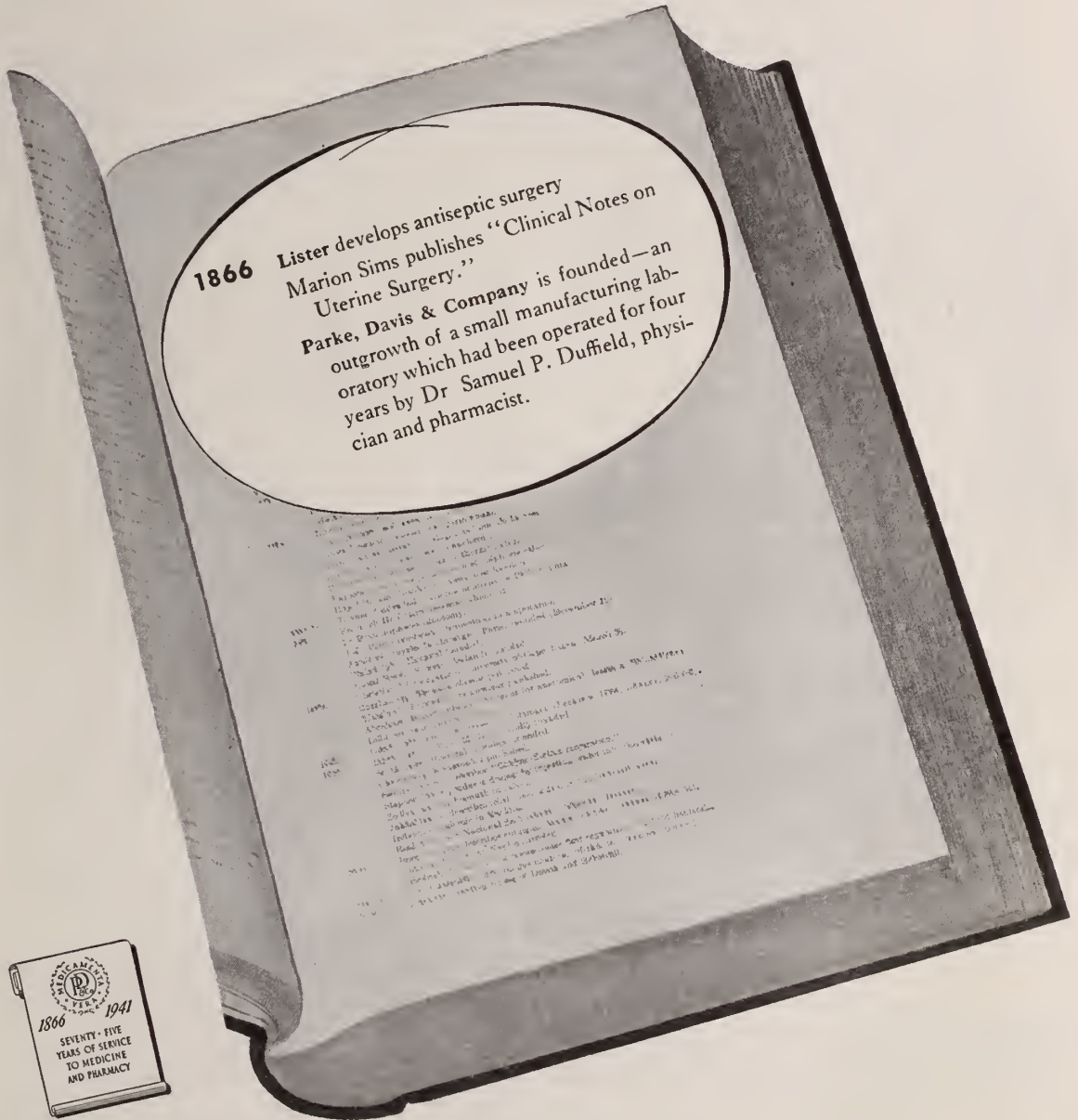
Children—Teaspoonful once or twice daily as required



*Petrolagar—The trademark of Petrolagar Laboratories, Inc., Petrolagar Brand Emulsion of Mineral Oil . . . Liquid petrolatum 65 cc. emulsified with 0.4 Gm. agar in a menstruum to make 100 cc.

THESE NAMES, THESE YEARS HAVE HELPED MAKE MODERN MEDICAL HISTORY

One of a series of advertisements
commemorating three-quarters of a
century of progress and achievement



PARKE, DAVIS & COMPANY

PIONEERS IN RESEARCH ON MEDICINAL PRODUCTS

ADVANCES IN CANNING TECHNOLOGY

II. Development of the Tin Container

● Appert, discoverer of canning, did not know the reasons why his procedure for food preservation was successful. He clearly recognized, however, that his containers must be so constructed and sealed as to prevent contact of the food therein with air, after heat processing. Today we know that this is necessary to prevent re-infection of the food with air-borne, spoilage micro-organisms.

As containers, Appert suggested glass containers sealed by corks; the reason given is that glass is the "matter most impenetrable by air" (1). In 1810, one year after Appert's discovery was announced, Peter Durand, an Englishman, patented a procedure very similar to Appert's, which covered the use of a variety of containers, among them "vessels of tin (tin-plated iron)." From that time forward, the use of tin-plated containers rapidly progressed.

Commercial canning began in America about 1819. In 1825, Kensett and Daggett, two pioneers of canning in this country, received an American patent covering the use of tin-plated containers. Shortly thereafter, the name "tin can" was coined from the abbreviation of the formal name, "tin cannisters."

The story of the development of the tin can in America is an absorbing one which has been related in more detail elsewhere (2, 3, 4). By the time of the war between the States, the "hole and cap" type of can had been evolved. About 1890, can-making machinery was introduced to replace the

older hand-manufacturing operations whereby a skilled artisan could produce about 6 cans per hour. Modern can-manufacturing lines operate at speeds as high as 350 cans per minute.

The first three decades of the current century witnessed the development of machinery to make the modern type or "sanitary style" can now universally used for fruits, vegetables, and a wide variety of other products. The past ten years have brought vast improvements in the tin plate from which cans are made. Not long ago, almost any type of sheet steel was considered satisfactory. Today plate for cans must comply with rigid physical and chemical specifications established by the Research Laboratory of the can manufacturer.

As far as can be determined, tin containers were first introduced to avoid breakage which was experienced with the glass containers proposed by Appert. The other desirable characters of the tin container for foods were not fully appreciated at first; among these advantages should be mentioned its rapid rate of heat transfer, its low weight in relation to its capacity, and its opacity to light. Nor was the importance which the tin can has attained in our national life fully appreciated until world developments caused America to pause and take inventory. Only then was it generally realized that from its humble start 130 years ago, the tin can has risen to become an indispensable article in our modern civilization.

AMERICAN CAN COMPANY

230 Park Avenue, New York, N. Y.

REFERENCES

- | | |
|--|---|
| (1) 1811. The Art of Preserving. M. Appert, Black, Parry and Kinsbury, London. | (3) 1937. Appertizing. A. W. Bitting, The Trade Pressroom, San Francisco. |
| (2) 1937. The Canning Clan. E. C. May, The Macmillan Co., New York. | (4) 1940. The National Geographic Magazine, November, p. 659. |

We want to make this series valuable to you, so we ask your help. Will you tell us on a post card addressed to the American Can Company, New York, N. Y., what phases of canned-foods knowledge are of greatest interest to you? Your suggestions will determine the subject matter of future articles. This is the sixty-eighth in a series which summarizes, for your convenience, the conclusions about canned foods reached by authorities in nutritional research.



The Seal of Acceptance denotes that the statements in this advertisement are acceptable to the Council on Foods of the American Medical Association.

VITAMIN CONTENT OF SMA CONSISTENTLY HIGH



The range of variation in the vitamin A content of market milks, both fresh and evaporated, is as great as 35% between Summer and Winter.¹

S.M.A. is consistently high in vitamins every month of the year. Each quart of S.M.A., ready to feed, contains:

- 10 mg. Iron and Ammonium Citrate
- 7500 international units of Vitamin A activity
- 200 international units of vitamin B₁
- 400 international units of vitamin D

Vitamin supplements, other than the customary orange juice feedings, are usually unnecessary.

S.M.A. is specially prepared to help build strong, healthy babies. It provides easily digested fat, a protein that provides the amino acids essential for adequate nutrition and growth, and lactose as the sole carbohydrate proportioned to meet the nutritional requirements of the normal infant.

Normal infants relish S.M.A. . . . digest it easily and thrive on it.

1. Dornbush, A. C., Peterson, W. H., and Olson, F. R.: "The Carotene and Vitamin A Content of Market Milks." J.A.M.A., May 4, 1940, pp. 1748-1751.

" " "

*S.M.A., a trade mark of S.M.A. Corporation, for its brand of food especially prepared for infant feeding—derived from tuberculin-tested cow's milk, the fat of which is replaced by animal and vegetable fats, including biologically tested cod liver oil; with the addition of milk sugar and potassium chloride; altogether forming an antirachitic food. When diluted according to directions, it is essentially similar to human milk in percentages of protein, fat, carbohydrate and ash, in chemical constants of the fat and physical properties.



FOR PREMATURE AND UNDERNOURISHED INFANTS
A Special Product

PROTEIN S.M.A.
(Acidulated)

Protein S.M.A. (acidulated) is a modified form of S.M.A., intended to meet the special nutritional needs of the premature and undernourished infant and for infants requiring a high protein intake.

Protein S.M.A. (acidulated) is similar to both casein milk and lactic acid milk, but presents additional nutritional elements lacking in both.



PRESENTING

KARO SYRUP IN

GLASS!!



1½ LBS. NET.

The history of Karo is inscribed in the nutrition of millions of infants. It reveals universal acceptance of Karo Syrup as an excellent source of dextrins, maltose and dextrose. Karo remains the effective milk modifier for all forms of milk and for every type of infant feeding problem.

The composition of Karo cannot be improved, so it is now introduced in superior containers—in streamlined glass bottles. Karo Syrup is processed at sterilizing temperatures and sealed hygienically in these sparkling glass containers.

The high sanitary quality of Karo can now be maintained while using the clear glass bottles in the nursery or kitchen in the preparation of infants' formulas.

The cost of 24 ounces of Karo Syrup in glass bottles is only slightly more than in cans. Karo thus yields (volume for volume) double the caloric value of powdered maltose-dextrins-dextrose at a fraction of the cost.

Karo is bacteriologically safe; devoid of laxatives or any impurities; well-tolerated by newborns, infants and children; easily digested even in difficult feeding problems; absorbed by gradations at spaced intervals in the intestinal tract; prevents flooding of the bloodstream with exogenous sugars.



CORN PRODUCTS SALES COMPANY

17 Battery Place, New York City

KARO IS, OF COURSE, STILL AVAILABLE IN THE FAMILIAR SANITARY TINS

HIGHLY POTENT:

Navitol, a blend of refined fish liver oils, is not only as rich in anti-rachitic vitamin D as halibut liver oil with viosterol but contains 10 per cent more vitamin A. It can, therefore, be readily given in drop dosage or capsules.

ECONOMICAL:

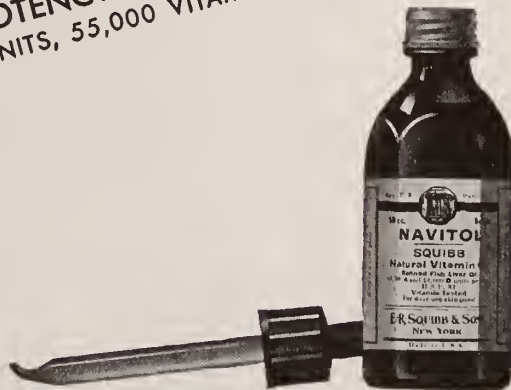
When you prescribe Navitol for your patients, they can obtain adequate vitamin A and D protection and a biologically standardized product, for as little as 8/10 of a cent a day, when it is purchased in the 50 cc. size.

NATURAL VITAMINS A AND D:

Navitol is a highly potent diet supplement, rich in natural vitamins A and D. Its vitamin activity is checked by biological assay in the Squibb Laboratories—an assurance that your patients will obtain full vitamin value.

NAVITOL

SQUIBB HIGH POTENCY NATURAL VITAMIN A AND D OIL
10,000 VITAMIN D UNITS, 55,000 VITAMIN A UNITS PER GRAM (U. S. P. XI)



Supplied in 10 cc. and 50 cc. dropper bottles, also in 3 minim capsules in boxes of 25, 100 and 250. Navitol is a trade mark of E. R. Squibb & Sons.



when appetite lags....

**employ this elixir of natural
B-complex and glycerophosphates**

If or the anorexia and sluggish digestion so frequently encountered during the winter months, Elixir 'B-G-Phos' offers a stimulating and exceptionally pleasant tonic combining the advantages of the entire B-complex from *natural sources* with glycerophosphates.

Elixir 'B-G-Phos' includes Vitamins B₁, B₂, and B₆ together with the filtrate factor, nicotinic acid, and other natural factors of the entire B-complex, combined with the glycerophosphates of calcium, sodium, potassium, and manganese.

Elixir 'B-G-Phos' not only tends to correct B-complex deficiencies but stimulates the appetite and helps to re-establish intestinal motility. Thus, disturbances of elimination are corrected and digestive functions are improved.

Elixir 'B-G-Phos' is supplied in pint and gallon bottles.

One Tablespoonful

*Three Times a Day
before Meals*

Elixir 'B-G-Phos'
Sharp & Dohme

A New Development

ORAL TABLETS

OF MALE SEX HORMONE



NEO-HOMBREOL (M) tablets, methyl testosterone 'Roche-Organon,' now make possible effective oral replacement therapy of male sex hormone deficiency. Three to four 10-mg. Neo-Hombreol (M) tablets by mouth are equivalent to 10 mg. testosterone propionate by injection. The marked oral effectiveness of methyl testosterone, amply demonstrated in experimental and clinical studies alike, vastly increases the convenience of male sex hormone medication. In the words of one investigator, oral administration of methyl testosterone "may ultimately replace all other methods of using testosterone or its propionate." (Foss, *Brit. M. J.*, 1939, 2:11).

Neo-Hombreol (M) tablets may be prescribed in all conditions in which male sex hormone therapy is indicated,

such as eunuchism (including cases of castration), hypogonadism (eunuchoidism), and male climacteric symptoms (impotence, etc.) in men, and certain cases of hypermenorrhea, dysmenorrhea, intermittent mastopathia, menopausal disturbances, and for the suppression of lactation in women. Physicians are invited to write for a special descriptive leaflet giving dosage recommendations.

• Neo-Hombreol (M) tablets, 10 mg. methyl testosterone each, are individually wrapped in sanitape and packaged in cartons of 15 and 30. (Note: Methyl testosterone is also highly active by cutaneous absorption. For use by inunction, Neo-Hombreol (M) Dosules are available, each containing 2 Gm. absorbable ointment base incorporating 4 mg. methyl testosterone, in boxes of 25).

NEO-HOMBREOL (M)

TABLETS

(Methyl Testosterone)

EFFECTIVE ORAL THERAPY

ROCHE-ORGANON, INC. • NUTLEY • NEW JERSEY

In Canada: ROCHE-ORGANON, LTD. • MONTREAL • TORONTO

1. "How can acid rebound and alkalosis be avoided in the treatment of peptic ulcer?"



2. "What are you doing to obtain such rapid ulcer healing?"



3. How can the ulcer patient be returned to his job and kept there?"



Six Questions



4. How has the mortality from gastric hemorrhage due to ulcer been reduced in one hospital from 29% to 3%?"



5. "What will best control "Night Pain" in the peptic ulcer patient?"



6. "What is the safest, quickest method of controlling simple hyperacidity?"

... one answer!

AMPHOJEL

Wyeth's Alumina Gel

1. Amphojel is safe. When Amphojel is used neither secondary acid rise nor alkalosis is possible for three reasons: 1. A gastric pH compatible with healing is maintained. 2. Amphojel is not absorbed. 3. Amphojel itself has a pH of approximately 6.7.

2. X-ray examination demonstrates a decrease in the size of the ulcer in 10 days when Amphojel is administered by the continuous intra-gastric drip. Pain is relieved in 8 to 24 hours.

3. Clinical evidence shows that a regimen of Amphojel—diet and rest results in more rapid healing of peptic ulcer. Amphojel aids the ulcer patient to lead a more normal life.



AMPHOJEL, WYETH'S ALUMINA GEL
Supplied in 12-ounce bottles

WYETH'S HYDRATED ALUMINA TABLETS
Supplied in boxes of 60 tablets

4. The administration of Amphojel by the continuous intra-gastric drip method has resulted in a greatly reduced mortality in cases of gastric hemorrhage due to peptic ulcer.*

5. Four drams of Amphojel given at bedtime exert a prolonged antacid effect usually lasting until morning. The patient sleeps more comfortably.

6. Simple hyperacidity is quickly, effectively controlled with one or two drams of Amphojel or a Wyeth's Hydrated Alumina Tablet.

* *Amer. Jrl. Med. Sc.*, 198, 155 (Aug., 1939)

JOHN WYETH AND BROTHER, INC., PHILADELPHIA, PA.



“NEW LAMPS FOR OLD”

Just as Aladdin's wife gave away an old lamp of inestimable value for a new one of less worth, so may a time-proved remedy be too readily given up for a new one of uncertain worth.

In the ever-changing field of urinary antiseptics, the therapeutic bazaars may be echoing the cry, “New lamps for old.” But the wise physician holds tenaciously to that which, in his experience, has earned his approbation and confidence.

This, metaphorically, is the history of UROTROPIN, the original methenamine. Today, it continues on its way, unostentatiously perhaps, but no less well regarded than five decades ago when it revolutionized the antiseptic treatment of urinary infection. In the therapy of pyelitis, cystitis and other infections of the urinary tract, it will continue to remain “Faithfully yours.”

UROTROPIN

Sanitaped, in 5-grain tablets, 30 in a box; 7½-grain tablets, 20 in a box. Also in bottles of 50, 100, 500 and 1000 tablets. Request trial supply.



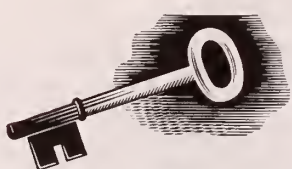
SCHERING & GLATZ, INC.

113 WEST 18th STREET
NEW YORK CITY

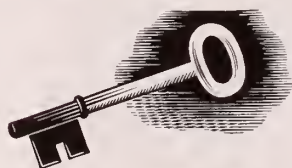
A Reminder from Borden about

FOUR KEY PRINCIPLES IN INFANT FEEDING

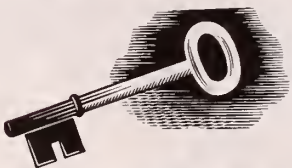
FOUR KEY PRINCIPLES in infant feeding make Biolac the outstanding prepared-formula liquid infant food:



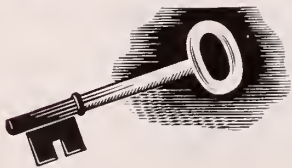
1. Fat Adjustment: In Biolac, the fat content is reduced to a moderate, readily assimilable level—and is homogenized to provide smaller, more readily digestible fat droplets.



2. Protein Concentration: In Biolac, protein is similarly homogenized for easier digestibility. It is maintained at a somewhat higher level than in breast milk to provide ample protein for the period of fastest growth.



3. Carbohydrate Adjustment: In Biolac, as in breast milk, carbohydrate is provided solely by lactose—nature's sole carbohydrate for the first few months of all mammalian life.



4. Vitamin Adjustment: In Biolac, Vitamins A, B₁, and D, also iron, are supplied in accepted amounts, assuring the baby of a constant and adequate supply.

Biolac needs only to be mixed with boiled water. It is sold only in drugstores; and no directions are given to the laity.

Please enclose professional card or letterhead when requesting literature or samples. The Borden Co., 350 Madison Ave., New York City.



Borden's BIOLAC

A BORDEN PRESCRIPTION PRODUCT



BETAPLEXIN

Trademark Reg. U. S. Pat. Off. & Canada

Brand of VITAMIN B COMPLEX

All
convenient forms
of oral
administration

ELIXIR
SYRUP
TABLETS
CAPSULES

Contains vitamins B₁, B₂(G), B₆,
nicotinic acid and filtrate factor

POTENCY OF DECLARED FACTORS

	ELIXIR	SYRUP	TABLETS OR CAPSULES
	Each teaspoonful (5 cc.) contains	Each teaspoonful (5 cc.) contains	Each tablet or capsule contains
Vitamin B ₁	0.75 mg. (250 U.S.P. or international units)	1.5 mg. (500 U.S.P. or international units)	0.375 mg. (125 U.S.P. or international units)
Vitamin B ₂ (G)	500 gammas (200 Bourquin-Sherman units)	600 gammas (240 Bourquin-Sherman units)	250 gammas (100 Bourquin-Sherman units)
Vitamin B ₆	300 gammas	675 gammas	100 gammas
Nicotinic Acid	8 mg.	9 mg.	4 mg.
Filtrate Factor	54 Jukes-Lepkovsky units	120 Jukes-Lepkovsky units	20 Jukes-Lepkovsky units

DAILY DOSAGE

	ELIXIR OR SYRUP	TABLETS OR CAPSULES
Prophylactic		
Children	1-1½ teaspoonfuls	2-3
Adults	2 teaspoonfuls	4
Therapeutic*	1-2 tablespoonfuls	6-12

Winthrop

**CHEMICAL
COMPANY,
INC.**

Pharmaceuticals
of merit
for the physician

NEW YORK, N. Y.
WINDSOR, ONT.



* For severe deficiency larger amounts are prescribed. In acute pellagra, treatment may be supplemented by nicotinic acid.

The Torpid Bowel of Pregnancy



CONSTIPATION, bowel sluggishness—particularly during pregnancy—contraindicates the use of harsh or violent measures of treatment.

Therefore why not prescribe

MUCILOSE (STEARNS)

which favors normal peristalsis and does not exercise a purging or irritating action?

Mucilose offers a hemicellulose (vegetable gum) prepared by a special process from the *plantago loeflingii*.

It holds ingested water in the feces, thereby producing a normal, plastic, easily-passed stool.

NOTE: Mucilose—available either in flakes or granules—in no way interferes with *vitamin nutrition*.

For relief of colic or spasm

CYVERINE HYDROCHLORIDE

Relaxes smooth muscle • Inhibits peristalsis
An effective anti-spasmodic

FREDERICK STEARNS & COMPANY • DETROIT, MICHIGAN

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Please send me a clinical supply of
Mucilose Granules

Cyverine ☐

Name..... M. D.

Address.....

City..... State.....

Lend Us 14 by 22 Inches of Desk Space—



...and you can see for yourself what a valuable addition to your diagnostic facilities the G-E Model F-3 Portable X-Ray Unit could be. Right in your own office you can operate this powerful, efficient, compact x-ray unit exactly as it will be used in your practice—on your desk or table.

The satisfactory experience of hundreds of F-3 owners is your assurance that you can rely on the F-3 for dependable performance—in your office or at the patient's bedside—wherever adequate roentgenological service is not available. Its simplified control is easy to operate, and its full flexibility provides accurate alignment with minimum patient discomfort.

If, like most value-wise medical men, you demand proof of what your money will buy before you spend it, you won't accept mere claims about the worth of any portable x-ray unit. G.E. willingly offers to furnish full proof of the F-3 unit's reliability, dependability, and economy of first cost and maintenance. Protect your investment; buy the *safe* way—sign and mail the coupon to see the *proof*!

CLIP, SIGN, and MAIL

- ☐ Have your local representative arrange with me for a "See-the-Proof" demonstration of the G-E Model F-3 in my office, at my convenience.
- ☐ Send me my copy of the G-E Model F-3 Catalog.

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**GENERAL  ELECTRIC
X-RAY CORPORATION**

2012 JACKSON BLVD.

CHICAGO, ILL., U. S. A.



Drink
Coca-Cola
Delicious and Refreshing

**THE
DRINK
EVERYBODY
KNOWS**

COPYRIGHT 1939, THE COCA-COLA COMPANY

ECZEMA

SUB ACUTE and CHRONIC

PSORIASIS

and kindred

SKIN**AFFECTIONS***Prescribe**New!***LAN-O-DERM**

LAN-O-DERM contains irradiated colloidal crude coal tar, not a distillate of tar. Mercury .018, salicylic acid and zinc are added merely as adjuvants to promote keratolysis and thus establish a better bio-chemical reception of the irradiated tar by the skin lipoids. Anti-pruritic. Low toxicity. Anti-parasitic. Non-irritating. Mildly anesthetic.

CLEANLINESS of application assures patient cooperation. Lan-O-derm vanishes cleanly and rapidly, there is no greasy residue. Light in color. Non-staining. No bandages are necessary.

ECONOMICAL: Ethically distributed in 2 ounce jars. — 75c. Retail \$1.00. Please request your druggist to stock the prescription size jar. If you dispense: Order the 16 ounce dispensing size jar direct. \$4.00.

LAN-O-DERM IN RESISTANT SKIN AFFECTIONS

CROYDON LABORATORIES INC. P. O. BOX 2163. PHILADELPHIA, PENNA.

Gentlemen: Please send me free sample of Lan-O-derm, together with literature:
Irradiated Crude Coal Tar, its Medical Value in the Treatment of Skin Lesions.

..... M. D.

Address:

City State





3 Little "Plastules"

REGISTERED U. S. PAT. OFFICE

● Three little Hematinic Plastules Plain is the suggested daily dose for secondary anemias.

Small, easy to take and well tolerated, this modern iron therapy appeals to the physician who desires effective treatment at a reasonable cost to the patient.

Rx HEMATINIC PLASTULES PLAIN

Suggested dosage—1 T. I. D. after meals.

or

HEMATINIC PLASTULES with LIVER CONCENTRATE

Suggested dosage—2 T. I. D. after meals.

BOTTLES OF 50 AND 100

T H E B O V I N I N E C O M P A N Y

8134 McCORMICK BOULEVARD • CHICAGO, ILLINOIS

Cornerstones

Only through ability to establish and maintain high standards and to contribute new and useful products for the control of disease can a pharmaceutical manufacturer become a helpful factor in world medicine.

GELSEALS MULTICEBRIN

(Pan-Vitamins, Lilly)



One gelseal contains a daily prophylactic dose of *all* the better known water-soluble and fat-soluble vitamin fractions. The dose of Gelseals 'Multicebrin' may be increased for those patients with definite signs of multiple vitamin deficiency. Supplied for the physician's prescription in bottles of 30 and 100 gelseals.

ELI LILLY AND COMPANY

Principal Offices and Laboratories, Indianapolis, Indiana, U. S. A.

ILLINOIS MEDICAL JOURNAL

THE OFFICIAL ORGAN OF
THE ILLINOIS STATE MEDICAL SOCIETY

VOL. 79

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No. 2

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*Deceased

Editorials

WE GET THEM FROM EUROPE INCLUDING STATE MEDICINE

NATION'S BUSINESS, January, under the title "Imported whiskers and 'isms" appropriately says:

IT'S TIME the school textbooks were revised to inform the student about imports, intangible as well as tangible. From Europe we get whiskey and socialism, olives and communism, woollens and free love, wine and militarism, chemicals and state medicine, *et cetera*. In all these the balance of trade is heavily against the United States.

Latest import from Europe, although distribution is so far limited largely to New York, is a rich crop of whiskers. All kinds of beards are represented — scientific, military, political, plain and fancy. Even the local boys in Gotham are aping the lionized refugee in hirsute foliage. Columnist Lucius Beebe says that American faces and the English language have almost disappeared from the boulevards of Manhattan.

Success formula for young men from the hinterlands who want to make a big splash in New York — or Washington: Grow a foreign-trimmed beard, cultivate a dialect and don't let on you were born in the United States.

EUTHANASIA

From the days of the noble Augustus Caesar, who, according to his historian, Suetonius, was wont to breathe the wish for an "euthanasia," a swift and painless death, the subject has preoccupied the minds of men, cropping up perennially as a controversial topic in philosophy, literature and religion. It was not until the last decade, however, that the idea attained sufficient prominence to be of concern to legislators, both abroad and in the United States.

On the question of euthanasia, the middle ground is not possible to a thinking person, for there is a fundamental cleavage in the phil-

osophy of the supporters and opposers of "merely-killing."

The proponents of euthanasia belong willy-nilly to the Nietzschean school of thought, among those who proclaim the right of the individual to take human life, his own or that of his neighbor, in order to insure the survival of the fit. In the words of Nietzsche's mouthpiece in *Also Sprach Zarathustra*, "My death, praise I unto you, the voluntary death, which cometh unto me because I want it."

Those who oppose euthanasia do so primarily because they follow the teaching, promulgated through the centuries by Christian ethics, that human life is sacred, that it is God-given, and therefore that no mere human, be he the sufferer or another, has the right to end human existence.

The trend of Continental public opinion is revealed in the last novel, *Flucht in die Finsternis* (Flight into Darkness), of the Austrian physician-author, Schnitzler. He views euthanasia as quite justifiable and through the mouthpiece of the doctor's brother would have us believe that physicians with the humanitarian instincts of Otto's type practice euthanasia more widely than is generally conceded.

It is in England that euthanasia has most occupied the thoughts of legislators in the past decade. Before discussing proposed legislation, it might be well to state, however, that those who favor euthanasia may be divided into three groups: first, those who favor legislation providing that euthanasia be administered only upon the request of a sufferer for whom there is no cure known to medical science; second, those who would apply it only to persons in early life (monstrosities or mental defectives) who are doomed to useless lives until death removes them; third, the extremists who would apply euthanasia to the congenitally defective, to the paralytic, the helplessly crippled, the incurably insane, the criminal, the hopelessly psychotic — all those who are a burden to themselves and to the community.

Under the leadership of one of England's leading surgeons, the late Lord Moynihan, it was the first group which was most influential in that country in the past decade. In 1931 Dr. Millard, president of the British Medical Society, addressed the group entirely upon that

question. Euthanasia attained public prominence in 1935 when the November 7th issue of the *London Daily Mail* carried an account of a physician's confession of five "Mercy deaths." His victims, according to the newspaper account, were a newborn baby, "doomed to imbecility," and four adults suffering from incurable diseases. The ensuing publicity resulted in the creation of the Voluntary Euthanasia Legalization Society.

Thanks to the efforts of the Society, a bill was drafted and introduced into the House of Lords on Nov. 4, 1936. After a day's debate the bill was "postponed" by a 35-14 vote and hasn't been revived since. At the time the advocates of euthanasia emphasized their wish to legalize it on terms which would guard against error, accident, haste, misunderstanding or its administration so long as the faintest hope of recovery remained.

According to the Euthanasia Legalization Plan of the British, a person declared hopelessly incurable in suffering can make all worldly arrangements and declare a desire for a merciful departure. When all relations and two physicians decide and sign the document, it is presented to a medical referee, who must visit the invalid and each relative and friend to ascertain that there is no individual interest and that everything is properly arranged. The patient must be twenty-one years of age before being permitted to make application. The medical certificates must be signed by the practitioner in attendance and another named by the Minister of Health. In such cases no inquest would be necessary. Then twelve judges, presumably physicians, must reach an unanimous opinion of its justification. It has been pointed out that only the wealthy could afford such a procedure, and the patient might easily die a natural death before the twelve physicians could agree.

In January, 1938, the National Society for Legalization of Euthanasia was organized in New York with the hope of preventing the tragedy of suicide after the administration of euthanasia in hopeless illness. Cooperation with the British Society was essential to its program; so its advisory board included prominent Englishmen as well as Americans. The founder and president is the Rev. Charles F. Potter, while the board numbers among its members

Dr. Foster Kennedy, neurologist; Dr. Clarence Little of the American Society for the Control of Cancer; Oscar Riddle, Carnegie geneticist, H. G. Wells, Julian Huxley and Havelock Ellis.

Last year a bill was in preparation for introduction in the New York State Legislature authorizing the administration of euthanasia to incurable sufferers on their own request. It provides for a commission of three persons, two physicians, to report to the Court at the request of the sufferer. Euthanasia is to be administered by any person chosen by the patient, but no person is to be obliged to do it against his will. Here, according to its endorsers, the procedure is amply safeguarded against abuse and the administration is not limited, as in the English bill, to physicians.

So far the leading judicial decision on the subject in the United States is "The People vs. Frank C. Roberts" (Michigan, 1920). Mrs. Roberts, incurably ill, pleaded for death. She attempted to kill herself by drinking carbolic acid. Failing in this attempt, she finally begged her husband to end her suffering. He dissolved Paris green in a glass of water and she died as a result of drinking the contents. Roberts was convicted of willful murder and condemned to life imprisonment. The conviction was confirmed by the Michigan Supreme Court.

However, public opinion does seem to be shifting since the World War. It is gradually establishing an unwritten law in condonation of humanitarian homicide. Records show that while "mercy-killing" is legally murder, the killers are seldom convicted.

The position of the American Medical Association in the matter clearly defined by Dr. Fishbein at the time the British legislation was being discussed. "No civilized country permits murder except in self-defense—"

Dr. Charles F. Potter, president of the Society in the United States, gave his answer thus: "The church may oppose euthanasia — and medical men may bring up their Hippocratic oath (dated 400 B.C.). But common men and women, faced with the practical problem of whether or not they will let their loved ones suffer torment—will cut through all this ancient red tape and somehow make it possible to do the decent and right thing—"

Certainly the question of legalized euthanasia

has brought forth expressions of opinion both pro and con from many prominent personages in the United States and England. The arguments are varied and interesting, although, as was stated above, the question finally resolves itself into the fundamental one of the sacredness of human life.

Those who favor euthanasia maintain, to begin with, that there are definitely incurable diseases. When the British bill was under discussion, Lord Ponsonby quoted the late Lord Moynihan to this effect. The proponents of the bill also pointed out that the sufferer, and *no one else*, should have the right to decide whether life should be continued or not. They mentioned in addition that these cases were few in number. And why, they asked, should it be a crime to grant final surcease of pain to a human being, when we may call in the Humane Society to end the existence of a suffering animal!

The advocates of euthanasia insist that while its opponents stress the point that legalization might facilitate crime, at the present time crime is easy in such cases. They bring to our attention the fact that physicians cannot be reasonably expected to risk the serious consequences of their merciful impulses. Hence the duty falls almost invariably on members of the family. This merciful act is often followed by the suicide of the person performing it.

As for the sufferer himself, our attitude would be modified toward him in case of suicide. Instead of a furtive escape (a leap from a window, gas, the razor, or a draught of some corrosive and searing disinfectant) would be substituted deliberate farewells, an affectionate last word and euthanasia.

Practically every writer on the subject of euthanasia cites the case of Charlotte Perkins Gilman, considered by Carrie Chapman Catt one of our country's twelve most capable women. Suffering from an incurable cancer, she chose to take her own life by chloroform and left a note justifying her suicide. Certainly, these writers maintain, Charlotte Gilman was a woman of courage and no stigma should be attached to her act.

Looked at from the economic standpoint, according to William G. Lennox¹ in the official

¹ Lennox, Wm. G.: Should They Live? The American Scholar V. 7 No. 4:454-66, Autumn, 1938.

publication of the Phi Beta Kappa, euthanasia would be a boon to society, because the number of unproductive citizens which it can support is limited. He would select, preserve and improve the good citizen and eliminate the bad. He assails the medical profession on three grounds: first, he asserts that a majority of doctors agree with the views of the advocates of euthanasia, but fear to say things distasteful to the unbridled sentimentality of our times. He cites the case of Sir William Osler, subjected to a whirlwind of abuse because he was reported as advocating chloroforming of those who reach 60.

Second, Lennox states that doctors, in common with political Utopians do not plan for the future in terms of a balanced budget. Third, he asserts that doctors fail to assume leadership in social questions.

Medical science, Lennox continues, tends to repeal the law which has been the mainstay of evolution, the survival of the fit. As for society, it deliberately, systematically and with great cruelty kills its strongest members in war, while it unmercifully prolongs the lives of its weakest.

Among the outstanding Englishmen who have expressed approval of euthanasia are Julian Huxley, Lord Denman, and Dean Wm. R. Inge. It seems anomalous to Dean Inge that a man may be punished for cruelty if he does not put a horse or a dog "out of its misery" but is liable to be hanged for murder if he helps a cancer patient to an overdose of morphia.

One illustrious member of the medical profession in the United States, not only in favor of euthanasia, but an extremist on the question, is Dr. Alexis Carrel. "Sentimental prejudice," he says, "should not stand in the way of civilization. It is my opinion that not only incurables, but kidnappers, murderers, habitual criminals of all kinds as well as the hopelessly insane should be quietly and painlessly disposed of."

Dr. Frederic Bancroft, although quoted as saying, "I don't see why we shouldn't give humans the same treatment that we accord animals," admits that it is practically impossible to be certain that any condition is incurable and is dubious that a suitable mechanism could be set up in such cases.

Perhaps Anthony Turano² puts the matter most succinctly. "To say, in the face of mod-

ern pathological knowledge, that misery must continue until respiration ceases is tantamount to insisting that the pathogenic bacillus is the only proper agent of divine will. If this were true, the medical profession would stand a small chance of reaching Paradise. For if it be human impertinence to accelerate, for charitable reasons, the manifest purpose of a lethal affliction, it is likewise presumptuous to intervene between a batch of God-sent microbes and their natural consequences."

It is an open question whether the 53 per cent of the nation's doctors approving euthanasia for incurables, according to a poll taken in the United States in 1937, would be willing to take on their own shoulders the responsibility for carrying it out.

Dr. Bowman's figures³ indicating that 45 per cent. of the public indorsed euthanasia would be slightly high in comparison with a poll made by *Fortune's Quarterly Survey for 1937*.

The results were:

	Defective Infants	Incurably Ill
No circumstances	40.5%	47.5%
With patient's permission		11.6
With family's permission	13.9	4.2
With approval of medical board	23.3	10.9
With patient's and family's permission	45.0%	1.7
With permission of medical board and family's and/or patient's		8.9
Don't know	14.5	15.2
		37.3%

Editorially and officially the medical profession has opposed euthanasia, and the Church has in most instances condemned the practice. Why? For several very good reasons.

The physician is especially interested because, if euthanasia is practiced, he must either administer it or certify to its necessity. But, as a doctor, he is dedicated to the postponement of death and the relief of suffering.

Many physicians who view euthanasia with tacit approval admit they would hesitate to accept the sole responsibility for its administration. Although the common experience is that a man so near death from incurable disease that he begs for merciful release has little or no chance for recovery, the doctor is not infallible,

2. Turano, Anthony: Murder by Request, *Am. Mercury* 36: 423-429, Dec., 1935.

3. Bowman, W. M.: Euthanasia, *Virginia Med. Monthly* 66: 723-29, Dec., 1939.

he is not omniscient. Euthanasia would be a weapon in the hands of the less reputable of the profession — those who are not yet honest enough and intelligent enough to know when and where to use it.

Moreover, permit "mercy-killing" and where would there be any stimulus for research or for progress in the field of cancer, arthritis, or other pain-giving disease? There would be one remedy, painless death. Why seek any other?

The second objection of the medical profession is that a stigma will attach to the name of the doctor who administers it as well as to the entire profession, even though it be permissible by law. Why debase the profession which the government has just demoted to the rank of a trade still further to that of executioner? It has been suggested that confidence of patients and their friends would be impaired at a time when it would seem that the acute need is for restoration of public confidence in the medical profession.

If the Hippocratic oath, which states that the physician's duty is to relieve suffering and to save or prolong life and which has been held as a lamp to the feet of the physician since 400 B.C. has any meaning or worth in our skeptical, modern day, casting it aside for the relief of a handful of sufferers is not going to benefit the medical profession. "I will give no deadly medicine to any, though it be asked of me—" has not always been kept inviolate through the ages, but certainly it has gained a measure of confidence for the doctor.

Meanwhile the courts continue to quote Blackstone to the effect that all human assistance in the process of death is "an invasion of the prerogative of the Almighty in rushing into his presence uncalled." The rank and file of the medical profession are not under the illusion that they have God-like powers of judgment and are loath to snuff out life, which they cannot rekindle.

Dr. Henri Coutard has stated: "Often in the medical arts we make mistakes. Life is too big a thing to take away. Even in hopeless cancer cases it is possible to give relief. Men born crippled or feeble-minded have been responsible for some of the great works of art. Why should their lives be taken?"

Dr. James Walsh made an interesting comment which may be apropos here. He states that rarely has a patient at Mother Alphonsa's Home for Incurable Cancer expressed a wish to die.

A. A. Brill⁴ gives the best psychological argument against euthanasia. That is, that euthanasia would have a profoundly disturbing influence on the race. Killing was the law of the forest; primitive races left their ill, aged and infirm to die from exposure and starvation. Before civilization was possible, the individual had to be taught to control his impulses, and above all, to stop killing. At best this impulse is only repressed, and mercy-killing, by destroying the sacredness of human life, would permit another outlet for the death instinct, to which we now give free vent in war. Euthanasia can and will produce a retrogression to a lower or sadistic level of behavior.

This opinion, given in 1936, may or may not have significance in the light of present European developments. Germany and England, the two nations where euthanasia has been most freely advocated, are today engaged in bombing each other out of existence. There has been a significant decrease in publicity given euthanasia in current periodical literature during the past year and a half, men's minds being occupied with the legal version of killing — war.

Zona Gale⁵ emphasized the same point: "Only when the race realizes that, no matter how disguised, killing is a primitive impulse, to be outgrown like any other form of inadequacy, will killing, as a social program for anything, receive its general quietus."

The editor of *Commonweal* has invited attention to the preeminence and high stamina of some of the groups which have practiced killing, not for punishment, but for social convenience. Sparta is no more; Athens bowed to Rome; the barbarians overran Rome, which was salvaged through the power of the Church.

There is one more dark side of the picture — namely, that euthanasia advocates have unwittingly suggested still another dubious side

4. Brill, A. A.: Reflections on Euthanasia, *J. Nerv. and Ment. Dist.* 84:1-12, July, 1936.

5. Gale, Zona: In Right and Wrong of Mercy Killing, *Lit. Dig.* 124:22-3, October 23, 1937.

of war, mercy-killing for the mental and physical derelicts of the First World War. Will more killing remove the first stain of blood?

Dr. Bowman indicates the futility of euthanasia. "So many drugs are available in this day and time that if properly selected and administered it will not be necessary for the patient to linger on in agony with pain unrelieved."

Finally, for those suffering incurables like Charlotte Gilman whose consciences dictate an end of pain, euthanasia is being practiced now. Why give it legal protection and force the role of executioner on the medical profession?

PUT THE DOCTOR ON A PAR WITH OTHER DEBTORS

The average run of citizens who take automobiles to a garage for overhauling or repairs does not expect to recover his property until he has paid the mechanic's bill. How different is his attitude towards the doctors indebtedness?

The doctor is mechanic, engineer and all around repair man for the ailing human frame. Yet he rarely gets paid when his work is done.

According to an editorial some time ago in *America* the Metropolitan Life Insurance Company made an interesting survey among its millions of policy holders. The survey reports that the average annual payment for the average family to its physician was \$140.00. Only the doctor himself knows when and after what delays this sum was finally paid to him.

The commentator says wisely:

"Now the cost of repairing the human machine engenders one of the most interesting problems of the day. It is a most important factor in the family budget. From very many parts of the country the report has come that, after the bill for medical services has been rendered, the family physician, who floated into the house with healing upon his angelic wings, assumes the menacing part of a Shylock.

"That medical, hospital, and surgical fees do impose a terrific burden upon some families is beyond all question. To many a man working for a salary, the physician's order to go to a hospital for an operation, is worse than a decree in bankruptcy. It means, in many instances, the loss of his job, and a period in which bills pile up so high that he must work for the rest of his life to pay them.

"This fact is recognized by the profession. For several years medical, surgical and hospital committees have been surveying the field, and as they are animated by an honest purpose, we can rely upon an accurate and intelligent diagnosis of a very serious social problem. But it has already become apparent that the reason of many a heavy hospital bill is the fact that the patient and his family have demanded unnecessary, and even luxurious, accommodations and special service. Even when they are sick, some people never lose their ambition to keep up with the family of Jones.

"One aspect of this problem should not be lost sight of. If some physicians demand, and collect, exorbitant fees, others never receive the modest fees which they ask. Every profession has its list of non-paying clients, but the physicians probably have the longest catalogue. Men who have been snatched from what Mr. Toots would designate that the Cold and Silent Tomb, are so jubilant that they are quite unable to think of anything so prosaic as a bill for professional services rendered. Besides, now that the crisis is safely passed, they are too busy arranging a trip to Europe.

"Most families have a tale of the Exorbitant Physician. There is such a creature. But there is also the physician who comes home tired out after a long day, to wonder where he can scrape enough money together to meet his office rent. In his behalf, we would urge the obligation, sanctioned by all law, human and Divine, to pay one's debts as promptly as possible."

IN MEMORIAM

DR. ANDREW J. MARKLEY

Dr. Andrew J. Markley, the oldest practicing physician in Boone County, Illinois died December 13th, at St. Joseph's Hospital, Belvidere, Illinois.

Dr. Andrew J. Markley was born May 3, 1858 in a log cabin near Archbold, Ohio. His boyhood days were spent in that vicinity and he was graduated from Bennett Medical College, March 21, 1881. The Doctor moved to Boone County, Illinois, in the fall of that year and began the practice of medicine. He was continuously engaged in the practice of medicine in Boone County from that time until his death with the exception of a period in which he served

as a District Health Officer of the State of Illinois in District No. 2.

Dr. Markley served as Treasurer of the Illinois State Medical Society for twenty-seven and one half years, his period of service was continuous up to the time of his death; he held



Dr. Andrew J. Markley

office in the society the second longest term since the inauguration of the State Society one hundred years ago.

On June 21, 1887, he married Miss Belle Bills in Fairbury, Nebraska, she died in 1919.

Dr. Markley assisted three younger brothers in the study of medicine — Dr. Paul Markley of San Diego, California, who survives, Dr. Will Markley and Dr. George Markley who predeceased him and who practiced in Rockford and Belvidere respectively. The doctor is survived by one daughter, Sue M. Shanesy of Evanston, a sister, Jennie Markley of Defiance, Ohio, a sister, Edith Randall of Belvidere, and his brother, Dr. Paul Markley of San Diego.

Doctor (commenting on lawyer who has just finished his speech to the jury): "If he had his conscience taken out it would be a minor operation."—Rocky Mt. Med. Jour.

ILLINOIS STATE MEDICAL SOCIETY COMMITTEE ON MEDICAL BENEVOLENCE

The House of Delegates of the Illinois State Medical Society at its Annual Meeting held May 21-22-23, 1940, voted that certain changes be made in the Constitution and By-Laws to enable the Society to establish a Benevolent Fund for indigent physicians and their widows.

The plan adopted very closely resembles the one which has been operating in Pennsylvania for the past thirty-seven years.

We are publishing herewith the personnel of the Committee together with an outline of the purposes and the power given the Committee to carry on this work.

Committee on Medical Benevolence, John S. Nagel, Chairman 185 N. Wabash, Chicago, Ill. Charles H. Hulick, Shelbyville; Clarence H. Boswell, Rockford.

PURPOSES OF THE COMMITTEE

1. To create a Benevolence Fund:
 - a. Through allocation of \$1.00 each year from dues of each member.
 - b. Through gratuities, endowments, etc.
 - c. Through the efforts of the Women's Auxiliary to the Illinois State Medical Society.
2. To investigate cases of alleged financial difficulties on the part of members, their widows or widowers.
3. When found worthy, to appropriate regular monthly benefits not to exceed \$25.00 to \$30.00 per month in any one case. When deemed advisable, may appropriate more over a short period of time when rehabilitation seems probable.
4. To designate the component society secretary in each county as the county chairman to submit applications from members for benefits, then to see that a questionnaire form is properly executed to give the desired information relative to the case. The councilor of the District may assist the Committee in submitting names of members, their widows or widowers, when he believes the individual is entitled to the benefits herein prescribed.
5. When it is the opinion of the Committee that the case is a worthy one and benefits should be allowed, the Chairman of the Committee

should notify the Secretary of the State Medical Society, stating the amount agreed upon as the regular allowance, stating the intervals at which the benefits shall be paid, so that proper vouchers may be submitted.

THE INVESTIGATIONS

When it is reported to the Committee that a member, widow or widower of a member is needy and unable to secure the necessities of life, a questionnaire form shall be submitted from the Secretary's office asking for the following information:

1. A brief social history of the applicant, past and present. Data concerning reasons for being in want whenever possible, and all other pertinent information which will enable the Committee to take the proper action.
2. A brief financial history including present assets and income, sources and amount.
3. Disbursing of present resources (rent, food, clothing, etc.).
4. Statements as to probable permanency of the present distress.
5. Any possible sources of assistance such as:
 - a. Relatives
 - b. Friends
 - c. Fraternal Organizations
 - d. Insurance
 - e. Pensions
6. Have all sources of help been solicited?
7. Additional information. Means by which influence might be exerted to find employment or some other source of income. Is there a possibility of rehabilitation? (With moderate financial assistance over a short period of time, would it be possible for the applicant to become self-supporting?)

PROCEDURE

Requests from members, their widows or widowers for assistance, if submitted to the Secretary, shall be referred to the Committee promptly. At the same time a questionnaire form will be submitted to the applicant or to the county society secretary, or to the Councilor if the information is submitted by him. All possible information which will aid the Committee in determining the eligibility for assistance, the amount actually needed, or if rehabilitation

through short time payments is probable, should be submitted promptly.

Each case will receive the proper consideration by the entire committee which shall pass final judgment on:

1. Eligibility for aid.
2. The amount of aid.
3. Whether for a short time or permanently.

The decision of the Committee shall be final and there will be no higher authority within the Society to whom appeals from decisions of the Committee can be referred.

In the event that additional income is received and the individual is no longer eligible for further benefits, the county society secretary or the Councilor submitted the data, should notify the Committee of these facts promptly.

As soon as a reasonable amount is accumulated in the Benevolence Fund, only the income from the Fund shall be used to pay benefits.

The Medical Benevolence Fund shall be subject to an annual audit as are other funds of the Illinois State Medical Society, although merely the amount of the Fund, the payments made during the year, the additions to the Fund, and the interest from investments shall be mentioned. The names of beneficiaries shall not appear in the annual audit, nor shall they be mentioned in the annual report of the Committee to the House of Delegates.

The Secretary of the State Medical Society shall maintain a separate file for all correspondence relative to beneficiaries, amounts paid, investigations and minutes of meetings of the Committee, which shall be a closed file and not open to inspection by others than members of the Committee, the Auditor, or a regularly designated Committee of the House of Delegates.

As the regular vouchers of the Illinois State Medical Society are paid through the State Bank and Trust Company of Evanston, all funds for benevolence purposes shall be maintained in another bank and payments for benevolence purposes shall constitute the only vouchers drawn on these funds. The council of the Illinois State Medical Society has allocated the sum of \$5,000.00 maintained in the National Bank of Monmouth for several years as a Certificate of Deposit, as the nucleus for the Benevolence Fund, and payments shall be made from this fund on this bank.

NOTE: The above report and procedure was presented to the Council of the Illinois State Medical Society in regular session on August 4, 1940, by the Chairman of the Committee on Medical Benevolence. The report and procedure were approved, and the Committee instructed to make the necessary arrangements to function immediately. The Council was authorized by the House of Delegates at the 1940 annual meeting to approve a method of procedure so that the work could be started with a minimum amount of delay.

TRANSFUSION OF CONCENTRATED SUSPENSIONS OF ERYTHROCYTES FOR ANEMIA

Sixty-one patients with anemia were treated by MacQuaide and Mollison with an erythrocyte concentrate. The results suggest tentative conclusions as to the advantages of such therapy. Hypertonic saline solution was used as a diluent for the erythrocyte suspension because it produced less hemolysis than physiologic solution of sodium chloride. Hemolysis was further reduced by adding 8 per cent dextrose, insuring a concentration of dextrose of at least 1 per cent in the final mixture. Hypertonic saline solution is necessary presumably because the citrate saline into which the blood is originally taken is hypertonic and cells stored with this fluid become hypertonic to physiologic solution of sodium chloride. Very few reactions were encountered, suggesting that the leukocyte gel is responsible for the reactions following whole blood transfusions. In the preparation of the concentrated suspension, infection must be avoided. The cell suspension may be given (as soon as possible after preparation) through an ordinary administering apparatus. If the leukocyte gel is not removed, it is advisable to use a gas mantle or some other type of filter. The suspension was not warmed before administration. One bottle of the cell suspension, that is the cells of two bottles after plasma has been removed, usually raises the hemoglobin approximately 10 to 15 per cent. Thus, in one case, following a transfusion of six bottles of the cell concentrate the hemoglobin rose from 26 to 90 per cent and the erythrocytes from more than one million to more than five million per cubic millimeter. The use of the concentrated suspension is contraindicated in shock, in which the immediate need is to restore blood volume rather than to increase the number of erythrocytes. The incidence of rigors among the 61 cases was 6.5 per cent, in contrast to 22 per cent among 45 cases in which transfusions of whole stored blood were used.

CONGENITAL PREPYLORIC OBSTRUCTION

Touroff and Sussman report a case of congenital gastric obstruction in a premature infant due to a

complete prepyloric septum of mucous membrane. Three and possibly all 4 offspring of the patient's father and the father's 2 sisters suffered from some congenital anomaly; all but the patient died in infancy. Symptoms of high obstruction commenced at birth. Additional features were failure of the child to pass meconium, and icterus which was more intense than normal. These manifestations suggested additional obstructive anomalies of the lower intestinal tract and biliary duct system. Roentgen examination revealed an obstructive lesion in the distal portion of the stomach or first portion of the duodenum. Operation, on the fifth day of life, consisted of multiple incisions of the prepyloric septum and pyloroplasty. No other anomalies were found. The early postoperative course was uneventful. The icterus was concluded to be an accompaniment of prematurity and failure to pass meconium as due to a lack of the normal stimulus to intestinal peristalsis, which apparently is initiated by the passage of gastric contents into the duodenum. On the eighteenth postoperative day a secondary, complete intestinal obstruction developed, and five days later, when another operation was about to be performed, the obstruction was relieved spontaneously. The course thereafter, although temporarily stormy, was one of improvement ending in recovery. Roentgenograms taken five months after operation revealed the gastrointestinal tract to be normal except for rapid emptying of the stomach and intestinal hypermotility. The follow-up period now is seventeen months. To the authors' knowledge the case is the first of its kind to be reported.

BLOOD SUBSTITUTES FOR ACUTE HEMORRHAGE

According to Buttle and his associates, storage of blood in banks has gone far to mitigate the delay involved in obtaining and bleeding donors, but, until blood can be stored for longer than a few weeks, blood banks will remain either wasteful or inadequate. There is need therefore for a blood substitute which can be stored for long periods, accumulated in large stocks and immediately available where casualties are likely to be received. The authors consider the therapeutic action of various blood substitutes has been compared, under standard experimental conditions, with those of whole blood, and the conclusion was reached that plasma is the only one which, in the cat, consistently gives results approximate to those obtained with whole blood. The authors place the other substitute solutions in the following descending order of value: serum, hemoglobin-Ringer, gum-saline, red cells in crystalloid solution, isotonic saline and isotonic dextrose. They conclude that filtration is the best method of overcoming the danger of plasma infection.

FIFTEENTH ANNUAL MEETING NATIONAL CONFERENCE ON MEDICAL SERVICE

(FORMERLY THE NORTHWEST REGIONAL CONFERENCE)

RED LACQUER ROOM, PALMER HOUSE, CHICAGO

SUNDAY, FEBRUARY 16, 1941

FORREST L. LOVELAND, M. D., Topeka, Kansas, President

HAROLD M. CAMP, M. D., Monmouth, Illinois, Secretary

P R O G R A M

9:00 A. M. Registration.

9:30 A. M. 1. VOLUNTARY GROUP MEDICAL CARE PROGRAMS.

- (1) "The Second Year" Mr. J. D. LAUX, *Executive Director, Michigan Medical Service, Detroit, Michigan*
- (2) "Why Are We Waiting?" W. M. HARTMAN, M. D., *Macomb, Illinois*
- (3) "What We Learned from the Wisconsin Experiments"
..... Mr. J. G. CROWNHART, *Madison, Wisconsin*
- (4) Question and Answer Period.

10:30 A. M. 2. MEDICAL PREPAREDNESS.

- (1) IRVIN ABELL, M. D., *Louisville, Kentucky*
- (2) MORRIS FISHBEIN, M. D., *Chicago, Illinois*
- (3) COLONEL LEONARD ROWNTREE, M. D., *Chief, Medical Division, Selective Service System, Washington, D. C.*
- (4) OLIN WEST, M. D., *Chicago, Illinois*
- (5) Question and Answer Period, conducted by ROY W. FOUTS, M. D., *Omaha, Nebraska*

12:15 P. M. NOON-DAY DINNER.

1:30 P. M. 3. President's Address . . . FORREST L. LOVELAND, M. D., Topeka, Kansas.

1:45 P. M. 4. Report of Nominating Committee; Annual Election of Officers; Selection of place for 1942 Meeting.

2:00 P. M. 5. STATE MEDICAL SOCIETIES' POST GRADUATE PROGRAMS.

- (1) "A Rural State's Program" H. E. SNYDER, M. D., *Winfield, Kansas*
- (2) "As Carried On in Minnesota; A Cooperative Program"
..... W. A. O'BRIEN, M. D., *University of Minnesota Medical School, Minneapolis, Minnesota*
- (3) "The Illinois Program" ROBERT S. BERGHOFF, M. D., *Chicago, Illinois*
- (4) Question and Answer Period.

3:00 P. M. 6. LEGISLATIVE PROBLEMS.

- (1) Federal E. H. CARY, M. D., *Dallas, Texas*
- (2) State MR. J. W. HOLLOWAY, JR., *Chicago, Illinois*
- (3) Question and Answer Period; Conductor to be Announced.

3:45 P. M. 7. MEDICAL CARE FOR SOCIAL SECURITY CLIENTS.

- (1) "Minnesota's Plan for the Care of the Medically Indigent"
MR. WALTER F. FINKE, *Director, Minnesota Division of Social Welfare of the Department of Social Security, St. Paul, Minnesota*
ALFRED W. ADSON, *Chairman Medical Advisory Committee to the Minnesota Division of Social Welfare, Rochester, Minnesota*
- (2) MR. WALTER G. STUMBO, *formerly Attorney for State Department of Social Welfare, Topeka, Kansas*
- (3) CHAS. H. PHIFER, M. D., *Chairman, Illinois State Medical Society Advisory Committee to State Department of Welfare, Old Age Assistance Division, Chicago, Illinois*

4:45 P. M. 8. "The Annual Meetings from the Standpoint of The Exhibitor"

..MR. C. H. WANTZ, President, Medical Exhibitors' Association,
Convention Manager, General Electric X-Ray Corporation, Chicago, Illinois

MEDICAL ECONOMICS

H. M. Camp, M. D.
E. P. Coleman, M. D.
J. H. Hutton, M. D.
Ralph Peairs, M. D.
R. K. Packard, M. D.

Edited by the Committee on Medical Economics
of the
Illinois State Medical Society
E. S. Hamilton, M. D., Chairman
Kankakee, Illinois

C. H. Phifer, M. D.
C. B. Reed, M. D.
C. B. Ripley, M. D.
C. E. Wilkinson, M. D.
W. M. Hartman, M. D.

Address all letters and communications to the Chairman.

MEDICAL ECONOMICS COLUMN FOR FEBRUARY

Amid the confusion and argument now going on at Washington, at this time, where charges and countercharges are flying fast, particularly in regard to the Defense Program, it becomes increasingly difficult to know what is really going on there of interest and importance to the medical profession. To be sure the papers of the nation are filled with news in regard to proposed plans for defense, as well as news on the war front of Europe, but little is to be seen of what is going on behind the scenes. Occasionally some small article appears on an inside page in small print, but all too often it is overlooked in the hurry and rush of modern life. We must always be cognizant of the fact that plans for changing the manner of conducting the practice of medicine are being held ready for the proper time to again bring them to the attention of the public.

On January 7, 1941, the press of the nation was presented with an article in which Senator Wagner of New York was quoted as saying that in line with President Roosevelt's call for widened "Opportunities for adequate medical care," he and others were sponsoring a bill, which would provide for federal and state co-operation in the broad program calculated to cost \$98,000,000 the first year. Wagner after a conference with the President said "that it was likely that an expansion of health facilities would be worked out in connection with the defense program. As tentatively outlined this program would call for cooperation between the federal and state governments in construction of hospitals, payment of compensation for disability wage losses, and expansion of maternal, infant and child health and welfare service, general public health services and general medical care." Certainly the above coming from so authentic a source as the senior Senator from New York, who has been the author of most

of the welfare bill presented to Congress during the past eight years, should make even the few "doubting Thomases" still remaining in the medical profession realize that the plan for altering the practice of medicine is still ready in Washington for the attention of Congress when that body has time to vote on it. And it is in strong friendly hands. It could be rushed through in rapid fashion if and when the proper opportunity appears.

The job of coordinating "all health, medical welfare, nutrition, recreation and other related fields of activity affecting the national defense," has been handed to Federal Security Administrator, Paul V. McNutt. He will be assisted by The Health and Medical Committee of the National Defense Council. The Committee will help to organize the country's medical resources, and will deal with the problems of industrial health and medicine, nursing, dentistry, medical education, hospitals and negro health. Mr. McNutt will have jurisdiction over the medical aspects of the draft and the rehabilitation of rejected men, over civilian and military medical supplies, research important to national defense; sanitation and health in defense industry sections and mobilization areas; selection of airplane pilots, health and medical service in defense regions; transfer of funds for health and welfare purposes; and correlation of all governmental medical agencies. A careful perusal of the above would lead to the conclusion that he had been given a most complete and inclusive position to control the practice of medicine as it can be interpreted to affect defense. One or two similar assignments from the President would make control of the medical profession considerably closer.

The trial of the American Medical Association for violation of the Anti-trust law has been tentatively set for February 5, 1941 by Justice F. Dickinson Letts. This should be followed carefully by the entire medical profession, either in the lay press, if it makes that publicity, or in

the pages of the *Journal of the A.M.A.*, where it will of course appear.

On pages 234 of the January issue of the *Journal of the A.M.A.* appears an editorial under the heading "California Governor advocates universal compulsory Health Insurance." This should be carefully read for it shows what can happen to the plans of the medical profession in the field of Health Insurance, before they have been tried out sufficiently to arrive at a definite conclusion when brought to the attention of reforming officials. Of course we hope that the medical profession of California will be able to exert sufficient influence to control any contemplated legislation in this field. It should serve as a warning to other state medical societies, so that they will be on their guard against similar bills in their respective states.

On page 142 of the *J.A.M.A.* of January 11, 1941 appears an editorial on "The Old Congress Passes, The New Begins," which gives a good resume of what occurred in Congress last year and also what is contemplated for the coming year.

The inauguration of a Republican Administration in Illinois a few weeks ago, will result in many changes affecting the health of its citizens. New departmental heads will be appointed as well as Superintendents of many of the State institutions. It is to be hoped that these positions will be filled with most capable men who will deliver satisfactory service to the people of the state and will work in cooperation with the medical profession, who stand ready and willing as always to cooperate with the state officers both as individuals and as an organization, the Illinois State Medical Society, in every possible way. There are many problems of paramount interest to the medical profession, in state administration, and we hope and believe that the incoming administration will seek and receive the cooperation of the medical profession.

The National Physicians Committee is expanding its activities again in order to be ready and able to meet any proposed inimical legislation in the new Congress. It is forming state committees, and generally strengthening its organization. In the near future it will probably do considerable work in Illinois. Many medical men will be contacted to help in the work of the Committee and we feel that it should have our

close attention and consideration. There is much work to be done in the field they have entered and it is time for us as individuals to decide how much we wish to cooperate.

Again, we want to bring to your attention the annual meeting of the National Conference on Medical Service, to be held at the Palmer House in Chicago, Sunday, February 16, 1941. The Secretary this year is our own, Dr. H. M. Camp. He has assured me of a most interesting program and would like a good attendance of Illinois physicians. Those of you, who have attended meetings of its predecessor the Northwest Regional Conference, know that it is the best meeting of the year for the consideration of the economic problems of the medical profession.

E. S. Hamilton, M.D. Chairman
Medical Economics Committee

Correspondence

TREATMENT OF HYPERTENSION

To the Editor: In the article on the surgical treatment of hypertension by Peet, Woods and Braden in the November 30th issue of the *Journal of the American Medical Association*, the authors claim "That the surgical treatment of hypertension by . . . splanchnicectomy and the lower dorsal sympathetic ganglionectomy offers a better prognosis in cases of severe hypertension than any other form of therapy as yet reported." Before the avalanche of operations descends upon us, let us examine a few of these claims. The authors compare a five year survival period of 50% with a series by Wagener and Keith (reference not stated) with a survival rate of 9% after 5 to 9 years, which must have been an unusually malignant group. One would ask why the authors did not furnish their own controls for comparison, which would have been more satisfactory in every way and why they did not make comparisons with other series in the literature. It is wise to remember that when an era of surgeons fail to run controls a later era will do so, as we are now doing in acute pancreatitis, gastric ulcer and cholecystitis.

I wish to present several other series for comparison. R. S. Palmer (*New Eng. J. Med.* 215: 569, 1936) treated 169 cases medically and has

made a careful analysis of his results with the idea of comparing them with the surgical treatment. They are very suitable for comparison with Peet's cases because both had about the same number of severe cases with systolic b.p. above 230. Fifty per cent, had a fall in b.p., 90% of the mild cases were relieved of symptoms, 75% of the moderate group and 46% of the severe group. Only 2 out of 113 in the mild and moderate groups became worse under treatment. The percentage of deaths was 20.1. Of the severe group over 45 years Palmer states: "Any real amelioration by surgical intervention is inconceivable."

Marshall (Brit. Med. J. 468: Mar. 12, 1932) studied 100 cases over a 4 year period, with a higher average systolic b.p. than in Peet's series. There were 19 deaths and 58%, all who presented themselves, were improved at the end of the period. Alhausen and Kerr (Am. J. Med. Sci. 178:470, 1929) got relief in 82% of a large series and Stieglitz got 77% relief in 250 cases on medication. Barker relieved 35 out of 45 with cyanates (J.A.M.A. 106:763, 1936) Wolffe and Digilio (J. Lab. and Clin. Med. 22:374, 1937) using tissue extracts, got relief in 62% with no permanent fall in b.p. They used 50 patients and 100 as controls, of those treated, only 1 died in the course of over a year, 3 controls died, a death rate of under 3% per year. Hutton using X-ray (Personal communication) in 385 cases got good results in 59%, he quotes also, Martin, Baker and McGuffin who got good results in 77% in a total of 307 cases. Buck (Ann. Int. Med. 11: 514, 1937) reduced the b.p. in 66% of a group by the use of psychotherapy. Elberg and Skulskey (J. Medsch, Tsikly, Kiev. 2:213, '32) got 90% good results in 63 cases with cyanates. In my own series of 92 cases treated medically (J. of Nerv. and Mental Dis. 91: 157, 1940) 45 per cent were reduced to normal b.p., there were 16 deaths, 6 failures, and in 70 there was improvement with a fall in b.p.

These results can be compared with those of Peet et al. There were 350 cases with 3.4% operative mortality and a subsequent mortality of 95. The blood pressure was considered reduced in 42.6%, in 2.4% the b.p. was increased and the rest unchanged. Of the 36 cases with normal renal function preoperatively as shown by the concentration test, 36% were worsened postoperatively, of 62 patients who had no preoperative

incapacity, 16% were incapacitated postoperatively, 39% were entirely free of symptoms, 11% were unchanged and 3% made worse.

There is reason to believe that the mild cases may be made worse by operation. With a 30% mortality which seems unusually high, one would judge that the operation cannot save those that are too far gone and may even put an extra load on some who might have survived. It supports the view, the mild and moderate cases can be helped by medical means, the malignant cases cannot be by any means. Unless surgery can save the malignant cases it has no use as a treatment.

It is from the death rates however that we learn most about the surgical treatment. Peet et al. had a death rate of 30.5%, Palmer's was 20.1, Marshalls 19 and in my series 17.5%. For various reasons these series are not exactly comparable but the least that it does is to put the burden of proof on those who advocate surgery.

Splanchnicectomy and similar operations it is agreed by authorities (Heymans et al: Gulesfelder Lecture, Chicago 1937) cannot reduce hypertension by reducing the vasospasm, they are insufficient. A. C. Ivy (Chicago Medical Society, Nov. 1938) is of a similar opinion. He states that splanchnic section does not attack the fundamental etiology of essential hypertension and that such operation is an allopathic and not an etiologic procedure.

And this is the dilemma of surgery, it does not reach the source of the trouble, only medical treatment intelligently applied can ever hope to reach the source.

1352 E. 55th St.

S. K. Robinson

PARAFFIN WAX DRESSINGS FOR BURNS

Xenia, Ill., Jan. 27, 1941.

To The Editor,

In 1923 I contributed a brief article on paraffin wax dressings to the Journal A.M.A. It was therefore with much interest that I read the article of Chester Ziess in the last issue of the Illinois Medical Journal. For many years I have been amazed by the almost perfect cosmetic results obtained by use of the method which he again brings to attention, as contrasted with the dismal cosmetic results of the treat-

ments I still see so commonly used. Why a method which gives 100% success in all but the hopeless cases, and does more than is even claimed for any other method, is not the only one in vogue, I fail to understand. For twenty-five years I have used this on second and third degree burns. Although I do not use preliminary disinfection (except in cases of neglected and already infected wounds) except for a daily rinse with normal saline, I have yet to see an infection when the dressings are changed and the surface dried daily. Moreover, if one is persistent and patient, skin grafting is not needed even in third degree burns. As a rule these heal smoothly and with surprisingly little scarring.

I recall one little girl whose entire arm and shoulder, except the hand and dorsum of the forearm, was so deeply burned by fire as to slough off like a bacon rind. Although I dressed this daily for eight months, it healed smoothly and with never a sign of infection. There was, however, contracture at the elbow and axilla, but I removed this under anesthesia, extended and immobilized the arm, and resumed the dressings for two months longer, when these parts were again epithelialized and perfect joint action obtained.

I also employed this method in the case of a child of two, who jack-knifed into a boiler of hot water, burning about a third of the body surface, much of it in third degree. Only one small scar on the back now remains in evidence. I have seen burned areas heal smoothly although they appeared to have been scooped out as if by a shovel, and have yet to see any superficial tissue defect in a healthy person, due either to burn or trauma, which failed to heal under the persistent use of daily wax dressings, although some of these were of the same nature as were those my colleagues treated by skin grafts.

In severe burns there is some pain for the first four or five dressings, even when a spray is used, especially in cases of burns of the extremities. Once applied the wounds are clean and painless.

As this matter has been much neglected of late years, I trust you can present this comment to the profession.

L. D. McMillan, M.D.

YOUR MEDICO LEGAL COMMITTEE STILL FUNCTIONS

Kankakee, Ill., January 28, 1941

To The Editor:

Since the change in 1939 of the defense plan for the members of the State Medical Society having malpractice suits, fewer and fewer cases have been reported to members of the Medico Legal Committee.

It is believed this is due to two reasons. First, that less suits are filed or threatened. Second, that many members of the Society do not understand the Committee still functions and are of as much, or more assistance to distressed members than before.

It is urged that all cases be reported as soon as a suit is threatened or filed. Often an experienced member can prevent suits by interviewing the plaintiff or the expected medical witness for the plaintiff. In other states not having this service there are more malpractice suits filed and this insurance is more expensive.

The name and address of the Chairman and Secretary of the Medico-Legal Committee appears in this Journal each month.

R. O. Hawthorne, Secretary
Kankakee, Illinois

AN ACT TO CREATE A COMMISSION FOR EDUCABLE MENTALLY HANDICAPPED CHILDREN AND TO DEFINE THE POWER AND DUTIES THEREOF

"Educable Mentally Handicapped Children" Defined

For the purpose of this Act the term "educable mentally handicapped children" shall include all persons under eighteen (18) years of age, who by reason of lack of development, injury or disease, have not developed sufficient intelligence to adjust themselves to their environment, but who can probably become self-supporting or able to make a permanent adjustment outside of an institution with special supervision and training.

Commission for Educable Mentally Handicapped Children

There is hereby created for the purpose herein specified, a commission consisting of the Director of Public Welfare, Superintendent of Public Instruction, Director, State Department of Labor Director of Public Health, four (4) prominent citizens actively interested in the problem of the mentally handicapped child, who shall be appointed by the Governor without regard to political affiliations. In choosing the prominent citizens the Governor shall invite nominations from leading university, medical, educational, and social organizations in the state.

Two (2) of the first members to be appointed shall serve for a term of two (2) years, and the other two (2) shall serve for a term of four (4) years. Thereafter appointments shall be for a term of four (4) years, the Director of Public Welfare, Superintendent of Public Instruction, Director, State Department of Labor, and Director of Public Health, to serve or appoint persons to serve for them.

The Commission shall be known as the Commission for Educable Mentally Handicapped Children. The Commission shall be appointed on or before August 1, 1941, and shall at their first meeting elect from their number a chairman and a secretary. The records shall be kept separately but under the the supervision of the Department of Public Welfare.

Regularity of Meetings.

The Commission shall meet at least (6) six times per year. The members of the Commission for Educable Mentally Handicapped Children shall serve without compensation. Traveling expenses for meetings will be paid to those members whose expenses are not already paid by the state.

Duties of the Commission.

The Commission for Educable Mentally Handicapped Children shall have power, and it shall be its duty:

(a) To coordinate the administrative responsibility and the services of the three (3) State Departments concerned as far as the welfare of the mentally handicapped child is affected; to compose any differences that may arise between departments:

(b) To stimulate all private and public efforts throughout the State in the care, treatment, education, and social service of the mentally handicapped child, and to coordinate such efforts with those of the State Departments into a unified and comprehensive program:

(c) To promote special classes and competent special instruction for all types of educable mentally handicapped children in all parts of the State, and to arrange for the special training of teachers for such classes:

(d) To promote adequate provisions for medical diagnosis and management of mentally handicapped children in all parts of the State:

(e) To promote vocational guidance, training, placement and social adjustment on an individual case work basis for all mentally handicapped children in need of such service:

(f) To study the situation in Illinois and in other States continually with a view of improving the service through administration and legislation:

(g) To promote facilities for the care of those children who are not doing well in their homes in boarding homes where possible:

(h) To promote a vocational school of the colony or village type for temporary training of those educable mentally handicapped who are not doing well in their own homes, boarding homes or schools and who are

showing early signs of dependency or delinquency with the view of eventually returning them to their homes or community. This school may serve as a clearing house and demonstration center for teaching this type of child.

(i) Finally, the Commission shall have authority to set up standards and to decide whether a given mentally handicapped child will profit by each type of training and care provided under this law.

EXAMINATIONS FOR APPOINTMENTS IN THE MEDICAL CORPS OF THE U. S. NAVY

The Surgeon General of the Navy, Rear Admiral Ross T. McIntire, (MC), U.S.N., announced the next examination for appointments as commissioned officers in the Medical Department of the Navy will be held at all of the larger naval hospitals and at the Naval Medical Center, Washington, D. C., on May 12 to 15, inclusive, 1941. Applicants for appointment as Assistant Surgeon, effective approximately two months from date of examinations, may now request authorization to appear for examination. Requests for such authorization should reach this bureau prior to April 21, 1941.

Applicants for appointment as Assistant Surgeon are required to be citizens of the United States between the ages of 21 and 31, graduates of Class "A" medical schools, have had at least one year of intern training in a hospital accredited for intern training by the Council on Medical Education and Hospitals of the American Medical Association, and to meet the physical and other requirements for appointment.

The naval service affords excellent opportunities for professional advancement. Medical officers receive the same pay and allowances as other officers of the Navy in corresponding ranks and the equivalent amount of service.

A circular of information for applicants for appointment as medical officers of the Navy, containing full information regarding physical requirements, professional examinations, rates of pay, and promotion and retirement data may be obtained by addressing the Bureau of Medicine and Surgery, Navy Department, Washington, D. C.

ANNOUNCEMENT OF VAN METER PRIZE AWARD

The American Association for the Study of Goiter again offers the Van Meter Prize Award of Three Hundred Dollars and two honorable mentions for the best essays submitted concerning original work on problems related to the thyroid gland. The Award will be made at the annual meeting of the Association which will be held at Boston, Massachusetts May 26th, 27th and 28th, providing essays of sufficient merit are presented in competition.

The competing essays may cover either clinical or research investigations; should not exceed three thousand words in length; must be presented in English; and a typewritten double spaced copy sent to the Corresponding Secretary, Dr. W. Blair Mosser, 133 Bid-

dle Street, Kane, Pennsylvania not later than April 1st.

The Committee, who will review the manuscripts, is composed of men well qualified to judge the merits of the competing essays. Dr. Brien T. King of Seattle, Washington received the Award for the year 1940 in recognition of his essay entitled "A New and Function-Restoring Operation for Bilateral Abductor Cord Paralysis."

A place will be reserved on the program of the annual meeting for presentation of the Prize Award Essay by the author if it is possible for him to attend. The essay will be published in the annual Proceedings of the Association. This will not prevent its further publication, however, in any journal selected by the author.

CENSUS BUREAU

The lowest infant death rate in the nation's history was recorded in 1939, according to tabulations made public by the Census Bureau, Department of Commerce.

The 1939 infant death rate of 48.0 deaths per one thousand live births is based on 108,532 deaths of infants under one year of age. In 1938 there were 116,702 deaths which resulted in a rate of 51.0. The 1937 rate was 54.4 based on a total of 119,931 deaths. The record-breaking mark of 1939 represents the culmination of two decades of general decrease in infant mortality.

Decreases in the infant mortality rate in 1939, compared with the previous year, were reported by forty-two states and the District of Columbia. The rate rose during the same period in six states. Minnesota's rate of 35.4 was the lowest last year. New Mexico, with a rate of 109.3 and Arizona, 95.5, reported the highest rates last year.

Infant mortality rates of the forty-eight states and the District of Columbia for 1939 and 1938 follow:

State	1939	1938	State	1939	1938
Alabama	59.6	60.8	Nebraska	36.5	36.4
Arizona	95.5	98.8	Nevada	42.8	47.7
Arkansas	46.1	51.4	New Hampshire	46.0	47.6
California	42.2	43.7	New Jersey	38.4	39.5
Colorado	54.8	60.2	New Mexico	109.3	108.7
Connecticut ...	36.1	36.3	New York	39.3	40.6
Delaware	40.3	52.8	N. Carolina	58.3	68.6
Dist. of Columbia	47.6	48.1	North Dakota ..	48.9	49.8
Florida	56.3	57.9	Ohio	42.7	43.3
Georgia	58.5	67.7	Oklahoma	48.2	49.0
Idaho	45.5	44.6	Oregon	36.6	39.2
Illinois	37.4	40.9	Pennsylvania ..	45.6	45.9
Indiana	39.3	42.5	Rhode Island ..	39.6	43.8
Iowa	38.8	40.5	S. Carolina	66.4	80.3
Kansas	39.5	43.0	South Dakota ..	42.6	43.8
Kentucky	52.2	61.3	Tennessee	54.4	63.5
Louisiana	62.4	67.1	Texas	66.9	65.1
Maine	52.3	56.2	Utah	39.4	46.8
Maryland	50.1	55.7	Vermont	46.3	48.4
Massachusetts ..	39.0	39.9	Virginia	61.0	66.2
Michigan	41.5	44.6	Washington ...	36.7	38.7
Minnesota	35.4	38.8	West Virginia ..	54.5	62.3
Mississippi	57.2	56.7	Wisconsin	40.1	41.8
Missouri	44.9	51.5	Wyoming	43.7	51.8
Montana	48.7	45.5			

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY

The general oral and pathological examinations (Part II) for all candidates (Groups A and B) will be conducted at Cleveland, Ohio, by the entire Board from Wednesday, May 28, to Monday, June 2, 1941, inclusive, prior to the opening of the annual meeting of the American Medical Association in Cleveland, Ohio.

Application for admission to Group A, Part II, examinations must be on file in the Secretary's Office not later than March 1, 1941.

Formal notice of the time and place of these examinations will be sent each candidate several weeks in advance of the examination dates.

Candidates for *reexamination* in Part II must make written application to the Secretary's Office before April 15, 1941.

The Board requests that all prospective candidates who plan to submit applications in the near future request and use the new application form which has this year been inaugurated by the Board. The Secretary will be glad to furnish these forms upon request, together with information regarding Board requirements. Address Dr. Paul Titus, Secretary, 1015 Highland Building, Pittsburgh (6), Pennsylvania.

EDUCATIONAL COMMITTEE

January Activities

SPEAKERS BUREAU

34 — Doctors were scheduled to address meetings of women's clubs, Parent Teacher Associations, Church Groups, Women's Auxiliaries, Rotary Clubs, Boys Clubs, B'nai B'rith, Catholic organizations.

Some of the topics presented in these lay discussions were:

"Health in the United States," "Child Health," "Middle Age," "Obesity," "Fads and Fancies in Medicine," "Cancer," "You and Your Doctor," "Maternal Welfare," "Heart Disease," "Mental Hygiene," "Medical Progress," "The Skin," "Diet & Vitamins."

RADIO

7 — Popular health talks were given over stations WJJD and WAAF in Chicago.

A new series of informal discussions between club women and doctors has been outlined by the wife of a physician in Chicago and will start, February 1st, station WAAF on Saturdays at 1:30. Why not listen in to these programs and let the Committee know how you like them, or send suggestions as to subjects you think your patients might like to hear discussed.

SCIENTIFIC SERVICE

28 — Doctors were scheduled to present scientific papers before the following county societies —

Will-Grundy, Vermilion, Clinton, Beardstown Hospital, McDonough, Jersey-Greene, Champaign, St. Francis Hospital Peoria, Bureau, Lake, McLean,

Effingham, Alexander, Kankakee, DuPage, Stephenson, Knox, Rock Island, Tri-County, Saline, Edgar, Iroquois, Macoupin.

SPECIAL ACTIVITIES

650 — Notices mimeographed for director scientific exhibits.

266 — Letters written for director scientific exhibits.

6 — Letters written for director technical exhibits.

Special package libraries furnished debaters on Socialized Medicine. One was sent to a college student in Vermont at the request of her family doctor who lives in Chicago.

20 — Package libraries furnished doctors and club leaders. Representative of the Educational Committee and Secretary attended initial meeting of the Coordinating Committee for Child Health held in January, Chicago. Secretary attended meetings of the Conference on Association Publicity and the Cancer Committee of the Society.

A new supplemental list of speakers and subjects for scientific programs was mimeographed and sent to secretaries of county societies.

SPECIAL SERVICE TO COUNTY SOCIETIES:

Notices mimeographed inviting doctors to attend following meetings —

99 — Bureau County	220 — Peoria County
303 — LaSalle County	90 — Rock Island
140 — Franklin County	83 — Clinton County
51 — Randolph County	50 — Edgar County
73 — Effingham County	125 — Saline County
60 — Alexander County	

LAY LIST:

8,584 — Articles to lay leaders throughout the state.
21 — New requests for this material came during the month of January. The following is typical of these letters —

"As Health Chairman of the - - - High School P.T.A. and the - - - Grade School P.T.A. I would like to know if it would be possible to have my name on your list to receive sufficient copies for all members attending the meetings of these two Parent Teacher Associations. We have an average attendance of 75. In case we do not have that many at meetings, don't think that the copies will be destroyed as I will turn them over to the High School Health teacher who said he would certainly appreciate getting them."

NEWSPAPER SERVICE:

424 — Health columns furnished regularly to down-state papers.

72 — Releases to Chicago papers

665 — "Do You Know" health columns to newspapers

50 — Releases about Bureau County

61 — " " LaSalle

25 — " " Franklin

11 — " " Randolph

4 —	"	"	North Shore Branch
31 —	"	"	Kankakee
8 —	"	"	Alexander
24 —	"	"	Saline
30 —	"	"	Effingham
26 —	"	"	Rock Island
53 —	"	"	Peoria
37 —	"	"	Clinton
16 —	"	"	Edgar

Articles written and approved:

Are You Allergic	Foot Trouble
Influenza May Come Again	The "Worry Months"
The Ace of Hearts	Goiter
Physical Fitness	Lowering Appendicitis Mortality
War Jitters	

Respectfully submitted,
Jean McArthur, Secretary

CLINICAL SECTION

CHICAGO HEART ASSOCIATION

Program presented by the Evanston Hospital
to be held at

THORNE HALL, Superior Street and Lake Shore Drive

9-12 A.M. Thursday, February 20, 1941

Dr. Nathan S. Davis, III, Chairman Clinical Section

Dr. Lowell D. Snorf, Local Chairman

I 9:00 Acute Pericarditis with Effusion and Response to Chemotherapy. Case Report.

Dr. Jay M. Garner

Discussion 5 minutes

II 9:20 Sudden Fall in Blood Pressure as an Etiologic Factor in the Development of Coronary Thrombosis and Myocardial Infraction.

Dr. Walter S. Priest

Discussion 5 minutes

III 9:40 Hypertension Associated with Unilateral Renal Disease and Improvement with Unilateral Nephrectomy.

Dr. Ernest G. McEwen

Discussion 5 minutes

INTERMISSION

IV 10:10 Effect of Hesperidin on Capillary Frigility.
Dr. L. F. Jourdonais

Discussion 5 minutes

V 10:30 Cardiovascular System in Vitamin Deficiency

Dr. Don C. Sutton

Discussion 5 minutes

VI 11:00 Case Report Dr. William A. Brams

Discussion 5 minutes

Open Meeting All Physicians Welcome

IMPORTANT: This meeting will be held at
THORNE HALL!

REJECTION OF ONE-THIRD OF THE MEN APPLYING FOR ARMY SERVICE

Rejection of one-third of the men applying for army service in the New York area is remediable by medical care only to a small extent, according to the January issue of the New York State Journal of Medicine.

"The defects for which men are being rejected by the army examiners," the Journal says, "are those structural and psychologic weaknesses upon which strenuous nature of field training could be expected to have a detrimental effect.

"The point of view of the army and of civilian medical examiners might be expected to vary considerably concerning the acceptability of certain risks and thus to account for the high percentage of rejections. They should not be taken too seriously even by constitutional pessimists. And, after all, what can be done for flat feet, bow legs, and perforated eardrums?"

Unfitness for medical service is not necessarily an index of health, according to the Journal, though "some of our socialist acquaintances start right away to yell louder for state medicine."

The Journal continues: "There is reason to believe that we are far healthier now than at the time of the last war. Tuberculosis, for instance, has declined as a cause of mortality 75 per cent more or less in the last twenty-five years, 'among men of draft ages insured in the industrial department of the Metropolitan Life Insurance Company.

"At the draft ages the reduction in heart disease mortality has been 40 per cent for white and 60 per cent for colored men between 1911-15 and 1939. As an indication of health conditions at ages 25 to 44 the mortality of white policy holders has decreased by two-thirds — from 11.1 per 1,000 in 1911, to 3.6 in 1939. The most substantial contribution toward the reduction in the total mortality rates comes from the marked improvement in the death rate from tuberculosis. The death rates (from 1911 to 1939) per 100,000 fell from 509.0 to 61.8 for white males and from 277.1 to 40.6 for white females.

"The mortality from syphilis, appendicitis has fallen markedly. The death rates for the group under review, per 100,000 for organic heart disease among white males, have dropped from 61.9 in 1929 to 50.2 in 1939; for cerebral hemorrhage from 12.0 to 10.6; and for chronic nephritis from 28.6 to 15.3."

Concluding the discussion, the official spokesman for the New York State Medical Society says: "As men are called for the draft, it is inevitable that there will be many rejected as physically disqualified. For years, physicians, educators, and many others have collaborated on a campaign urging periodic health examinations. Every facility has been offered which the ingenuity of man could devise to induce public cooperation in such a movement. If results have not equalled expectations, the system of providing medical care is not at fault so much as the impassable threshold of complete popular acceptance."

THIRTEENTH ANNIVERSARY NUMBER OF THE HAROFÉ HAIVRI

"The Hebrew Medical Journal"

The attention of the medical profession is directed to the appearance of a special issue of HAROFÉ HAIVRI (The Hebrew Medical Journal), a semi-annual publication, edited by Dr. Moses Einhorn. This volume commemorates the thirteenth anniversary of this journal and is dedicated to Prof. Sigmund Freud.

The founders had faith in the vitality and growth of modern Hebrew and foresaw that a Hebrew medical publication would be of inestimable value in the development and advancement of Hebrew medical literature; also, it has proved to be of particular service to the medical department of the Hebrew University in Jerusalem.

The contents of this Journal are not confined to technical medical topics, but are divided into several sections covering a variety of related subjects, such as Medicine in the Bible and Talmud, Old Hebrew Medical Manuscripts, Palestine and Health, etc. Among the contributors to the medical and editorial sections, have been such prominent physicians as I. S. Wechsler, A. Rongy, S. Solis-Cohen, B. Crohn, R. L. Kahn, J. Bullowa, D. Macht, etc.

In the section on Sigmund Freud, Dr. A. A. Brill presents a masterful exposition of "Freud's Metapsychology," and Dr. Philip Lehrman recounts much biographical detail and the story of Freud's earliest researches.

Another section of HAROFÉ HAIVRI presents from time to time mediaeval medical treatises, heretofore unpublished and interesting both from a historic and scientific viewpoint. In this volume a manuscript entitled "Hygiene of the Body" is included; it is written in verse by the famous Yehuda al-Charisi, who lived in Spain during the 12th Century.

Under the heading of "Personalia," biographical sketches of the foremost late physicians have been presented and their contributions to medicine reviewed, such as: Koplik, Frauenthal, Maurice Fishberg, Beer, Paul Ehrlich, Teschner, Jos. Goldberger, A. Jacobi, S. J. Meltzer, J. Solis-Cohen, Marcus Rothschild, Mendel, and others. In this issue a sketch of the life and work of the great medical figure, August Wassermann, is given.

In addition to an English-Hebrew medical dictionary, the original articles are summarized in English, to make them available to those who are unable to read Hebrew.

For further information, communicate with the editorial office of the HAROFÉ HAIVRI, 983 Park Avenue, New York City.

BEWARE OF TULAREMIA

Rabbit Fever is on the increase. A recent report of the Public Health Service shows that from 1930-1939, there were 1927 cases of Tularemia or rabbit fever in Illinois. The State of Ohio followed second with 900 cases and Missouri third with 827.

Tularemia is an acute infectious disease caused

by *Bacterium tularensis* and occurs under natural conditions in over 20 kinds of wildlife, especially in wild rabbits and hares. Man becomes infected by contact of his bare hands with the raw flesh and blood of these animals or by bites of blood-sucking ticks and flies which have previously fed on animals infected with *Bacterium tularensis*.

Tularemia symptoms include fever, chills, sweating, headache, vomiting, malaise and prostration. In the great majority of cases, a sore or ulcer marks the place of entrance of the infection. Because tularemia easily develops into a form of pneumonia, it is a very dangerous disease.

Anyone handling rabbits should wear rubber gloves. Freezing the meat does not kill the tularemia germs, but cooking does. One can therefore see the importance of cooking rabbit until it is thoroughly done.

INTERNATIONAL COLLEGE OF SURGEONS TO MEET IN MEXICO CITY

The International College of Surgeons will hold its Fifth International Assembly in Mexico City, August 10-14, 1941, in response to the invitation of the Mexican Government. With the assembly will be scientific exhibits of the latest advances in surgery and commercial demonstrations of the newest equipment.

Surgeons in the United States desiring information about the presentation of papers or scientific exhibits are requested to query Dr. Desiderio Roman, Chairman of the Scientific Committee, 250 South 17th Street, Philadelphia. Those seeking travel information are advised to communicate with Dr. Max Thorek, International Executive Secretary, 850 West Irving Park Boulevard, Chicago.

Surgeons from other countries should address the member of the Scientific Committee nearest them. This includes: Dr. Manuel Manzanilla, Mexico City; Dr. Jose Arce, Buenos Aires; Dr. Oswaldo Campos, Rio de Janeiro; Dr. Rudolph Nissen, Istanbul, Turkey; Drs. Raffaele Paolucci and Mario Dogliotti, Italy; Dr. Felix Mandl, Jerusalem; Dr. Y. Seuderling, Helsinki, Finland; Dr. Arnold Jirasek, Prague; and Dr. J. C. McCracken, Shanghai.

ANNUAL MEETING

The Executive Board of the American Public Health Association announces the dates of the 70th Annual Meeting as October 14-17, 1941. The meeting place is Atlantic City, New Jersey. Headquarters for the meeting will be the Convention Hall. Residence headquarters will be the Hotel Traymore.

The 69th Annual Meeting held in Detroit in October, attracted an attendance of more than 3100 from all parts of the United States and also from Canada, Cuba and Mexico. The 70th Annual Meeting, it is expected, will bring together more than 3500 professional public health workers.

A New Jersey Committee responsible for entertainment, inspection trips and other local aspects of the meeting is being formed under the direction of

Dr. S. L. Salasin, Health Officer of Atlantic City.

A number of related organizations habitually meet with the American Public Health Association. They will do so again at Atlantic City. Among them are the American School Health Association, the International Society of Medical Health Officers, the Association of Women in Public Health, the Conference of State Sanitary Engineers, the Conference of Municipal Public Health Engineers, and the Conference of State Provincial Public Health Laboratory Directors.

UNIVERSITY OF ILLINOIS COLLEGE OF MEDICINE CHICAGO, ILLINOIS

The CHARLES SUMNER BACON LECTURES for 1940-1941 will be delivered in the Medical and Dental College Laboratories Building, 1853 West Polk Street, Chicago, in Room 423, on February 12 and 13, 1941 by Dr. Henrik Dam, Biochemical Institute, University, Copenhagen.

Program

February 12, 1941, Wednesday, 1 P.M. —

"Vitamin K, Its General Significance in Biochemistry."

February 13, 1941, Thursday, 4 P.M. —

"Vitamin K, Its Role in Human Pathology and Its Application in Therapeutics."

HEADQUARTERS—108TH MEDICAL REGIMENT

1551 North Kedzie Avenue, Chicago, Illinois
MEDICAL OFFICERS DESIRED BY THE
NATIONAL GUARD

The 108th Medical Regiment, Illinois National Guard, has been allocated additional Medical Department commissioned personnel.

According to present plans the Regiment will be sent to Tullahoma, Tennessee, probably about March 1st, for one year active duty.

Physicians interested, and who possess the following qualifications are invited to call at the Northwest Armory, Kedzie & North Avenue, for interview, preferably on Thursday evening, the present drill night, or to call Captain Carlson at any time at the Armory, Humboldt 7477, for further information.

QUALIFICATIONS

1. Graduate of Class "A" medical school
2. Possess a license to practice medicine in Illinois.
3. Capable of passing physical examination.
4. Resident of the State of Illinois.
5. 21 to 36 years of age (23 to 32 preferred).
6. Citizens of the United States.
7. Military qualifications of advantage but not required.

Successful candidates will receive commissions as First Lieutenants, Medical Corps in the National Guard of the United States. The pay of a First Lieutenant is \$2,796 if single, and \$3,152 with dependents.

WOMAN'S AUXILIARY
TO THE
ILLINOIS STATE MEDICAL SOCIETY
COUNTY NEWS

Sangamon County has been enjoying a most interesting fall and winter season. Their first meeting which was held in Sept. was devoted to the laying of plans for their activities during the coming year and a report of the National Convention. Mrs. M. E. Rolens is president and Mrs. Harry Otten and Mrs. J. Donovan are in charge of the Program. Dr. Conrad Sommer, Supt. Div. Mental Hospitals, Dept. of Public Welfare, was the guest speaker for the Oct. meeting. He spoke on, "Progress in our Mental Institutions." The Nov. meeting was devoted to the subject Cancer. Miss Mary Herrington, Acting State Commander of the Woman's Field Army for the Control of Cancer presented a sound picture. Dr. C. L. Patton spoke on the "Recent Advances in Cancer Therapy." Mrs. David Long of Harrisonville, Mo. Regional Director of the Women's Field Army also talked concerning this great work. The Dec. meeting consisted of a luncheon after which Mrs. Rex Campbell read a paper on "Dichromacy." The meeting adjourned to attend the State Public Health Conference to hear a talk on, "Sex Hygiene in High School," by Dr. Robt. S. Breakey. A review of Hygeia is a routine part of their monthly programs.

Peoria County. The general theme for the programs of this auxiliary is, "Know Better Peoria's Medical Centers." At the January meeting Mrs. Glan McClugage spoke on, "Maternal Welfare in Peoria." Mrs. O. E. Barbour is the President. Thirty-four were in attendance. Two new members were accepted. The Auxiliary's Aims are; 1. To interperate the aims of the Medical Profession to other organizations interested in the promotion of Health Education, and 2. To do any other work approved by the advisory committee of the Peoria Medical Soc. Cook County.

The Stock Yards Branch was formerly inducted into the Chicago Auxiliary at the Evangelical Hospital, Jan. 14th. A rather extensive program was offered for this occasion. Those who took part as guest speakers were; Mrs. Harry J. Dooley, State President, Mrs. W. C. Bornemeier, County Pres., Mrs. Chas. Segal, Past County Pres., Mrs. A. F. Gareiss, First State Vice Pres., Mrs. W. J. Wanninger, Councilor 3rd Dist., and Mrs. John Soukup, Cook County Vice Pres.

The officers for this new Branch are; Mrs. Theodore Johnston, 2302 W. 35th St., Chicago; Vice Pres. Mrs. Julius Adler, 5700 S. Maplewood Ave., Chicago; Rec. Secy. Mrs. John Siedlinski, 4106 S. Francisco Ave., Chicago; Cor. Secy. Mrs. John Szukiewitz, 6556 S. Talman Ave., Chicago; Treas. Mrs. J. H. Oneil, 7938 S. Hermitage Ave., Chicago; Councilor, Mrs. J. Patejdl, 1700 W. Garfield Blvd., Chicago; Alternate, Mrs. F. A. Barry. There were twenty-two charter members. The Drexel Mother's Chorus in

Colonial Costumes, furnished the music during the Tea. Mrs. H. C. Lewandowski and Mrs. Julius Alder poured.

CONVENTION REMINDER

Make your reservations early for the Annual Convention which will be held in Chicago, May 20th and 21st. The Palmer House will be headquarters for the Illinois State Medical Society and the Auxiliary thus all sessions for the Doctors and their Wives will be held in this hotel. Write to the Palmer House, Chicago, or Mrs. E. A. Christofferson, Convention Chairman, 630 N. Elmwood Ave., Oak Park, Ill.

—Mrs. C. W. Stuart,
Chairman, Press and Publicity.

COMING MEETINGS

The South Side Medical Assembly will hold its annual midwinter clinical meeting on Wednesday, February 19th, 1941. All members of the medical profession are cordially invited to attend this meeting.

SURGICAL CLINICS 8 A.M. — 11 A.M.

Chicago Memorial Hospital: Drs. Peter S. Clark, Chas. J. Drueck, A. H. Mason, John Van Prohaska, M. L. Weinstein, Horace Stimson, Richard E. Heller, Beatrice E. Tucker, Harry B. W. Benaron, Edward L. Compere, S. Perry Rogers, Irving Muskat, Vincent J. O'Connor, Glenway Nethercut, Herman P. Davidson, Arthur H. Conley, Emil C. Duval, Alfred Lewy, James B. McBean.

Mercy Hospital: Drs. Charles Sawyer, Michael P. McGuire, George D. J. Griffin, John A. Kelly, Louis D. Moorehead, William J. Pickett, Arkell M. Vaughn, J. F. McNamara, Clement L. Martin, Wayne Flora, Wm. T. Carlisle, Herbert Schmitz and Associates, Herbert Landes, John Ferrin, J. Burke, Joseph Laibe, Patrick McNulty, Harold Voris, Kenneth Penhale, John D. Claridge, Joseph Leonard, Joseph T. Coyle, George T. Jordan, Carl Christoph, Herbert Nash, Carl Schaub, Louis Hoffman.

Michael Reese Hospital: Drs. G. Kolischer, Irving Koll, Joseph Eisenstaedt, H. Rolnick, Alfred Jones, Irving Shapiro, Fredk. Lieberthal, J. Grove, J. E. Lackner, Jos. L. Baer, Wm. F. Rubovits, Irving F. Stein, Ralph A. Reis, A. A. Strauss and Sigfried Strauss, Ralph Bettman and Wm. Tannenbaum, James Patejdl, Morris L. Parker, Sam Goldberg, N. N. Crohn, S. Perlow, Philip Lewin, Daniel Levinthal and Irving Wolin, Sidney Sideman, Jerome Finder, Frank Glassman.

Provident Hospital: Drs. Ulysses G. Dailey, William W. Gibbs, Walter S. Grant.

Wesley Memorial Hospital: Drs. Earl O. Latimer, Guy Van Alstyne, Mark T. Goldstine, Martin J. Di-Cola, Rocco A. Masessa, William B. Campbell, Willard G. Jeffries, Milo Jeffries, Hampar Kelikian, Joseph E. Schaefer.

LUNCH: Will be served at 12 o'clock at the Shoreland Hotel.

SYMPOSIUM: 2 P.M. — 5. P.M.

1. Intestinal Obstruction
 1. Edward Lewis, Conservative Management of acute Mechanical Ileus
 2. James Patejdl, Operative Treatment of Intestinal Obstruction
 3. Earl Latimer, Water and Salt Balance in Intestinal Obstruction
2. Diabetes
 1. Arthur Abt, Diabetes in Children
 2. Roy R. Jamieson, Diabetes in Adult
 3. Guy Van Alstyne, Diabetes in Surgery
3. Varicose Veins and Ulcers
 1. Robert E. Lec, Ambulatory Treatment of Varicose Veins
 2. G. de Takats, Surgical Diagnosis and Treatment of Varicose Veins
 3. Erwin P. Zeisler, Varicose Ulcers
4. Prostatic Hypertrophy
 1. James B. Merricks, Transurethral Resection of the Prostate
 2. Harry C. Rolnick, Perineal Resection of the Prostate
 3. Charles M. McKenna, Suprapubic Resection of the Prostate
5. Head Injuries
 1. Guy Cushing, Head Injuries without Fractures
 2. Harold Voris, Head Injuries with Fractures
 3. Lewis Pollock, Head Injuries from a Neurological Standpoint
6. Obstetrics
 1. Fred Falls, Toxemia of Pregnancy
 2. David Hillis, Accidents of the Third Trimester
 3. Edward Cornell, Breech Presentations and Version and Extraction
7. Blood Dyscrasias
 1. Raphael Isaacs, Lukemias
 2. Carroll L. Birch, Anaemia
8. Common Rectal Diseases
 1. Theo. F. Reuther, Anal Fissures
 2. Morris Parker, Fistula in Ano
 3. Guy V. Pontius, Hemorrhoids

DINNER: At 6:30 P.M. at the Shoreland Hotel

EVENING PROGRAM:

Sterility Studies in the Female, By Dr. James R. Bloss

COMMERCIAL EXHIBITS

SCIENTIFIC EXHIBITS

American College of Surgeons
University of Illinois
Medical History Society
Michael Reese Hospital
Municipal Tuberculosis Sanitarium
Northwestern University
Loyola University
Drs. Harold Voris and H. E. Landes

Sciatica and the Intervertebral Disk—Pennybacker's report is concerned with thirty consecutive cases of sciatica treated in the Nuffield Department of Surgery, Oxford, since May 1939. Since all the patients were operated on within the past nine months, it is too early to speak of ultimate results. The most dramatic relief was obtained in twenty-one cases of severe sciatica in which a loose fragment of prolapsed nucleus pulposus was removed. Most of the patients began to walk seventeen or eighteen days after operation, and although there was some soreness and stiffness of the back at first this improved rapidly with graduated exercise, and by the end of a month the patients were free from symptoms. Of the five patients who had herniation of the annulus fibrosus, two experienced immediate relief and had a painless convalescence. In three others, the results of operation were not satisfactory. The two patients with the cauda equina syndrome were completely free from pain after operation, but recovery of sphincter control and of the sensory and motor functions has been slow. Of the remaining cases, one was a negative exploration, but the patient has benefited considerably from the laminectomy; in the other, a fibro-angioma was removed from the intervertebral canal, but this has not completely relieved the pain. In no case has there been any aggravation of the symptoms or neurologic signs after operation. It appears that operation is advisable in three groups of patients: (1) in cases of acute sciatica which send the patient to bed and in which, despite adequate rest for from five to six weeks, the severe pain persists; (2) in frequently recurring attacks, which may be severe enough to send the patient to bed or to make his life a misery for three or four weeks every year; (3) in some cases of chronic continuous sciatica due to a prolapsed nucleus pulposus, in which the results of operation are no less satisfactory than in the acute and severe cases. But others in this group will be due to a herniated annulus fibrosus, and the results in these have not been as uniformly satisfactory as in those due to prolapse of the nucleus pulposus. Until it is possible to differentiate these varieties by the history and examination, or by myelography, some doubt must remain about the value of operation.—J.A.M.A.

An Irishman's description of influenza: "Faith, it's a disease that makes ye feel sick tin weeks after ye's well.—*Methodist Protestant Recorder*."

Our idea of sweet revenge is a chiropractor giving an adjustment to the dentist who pulled the wrong tooth for him.—Tile and Till.

CHEERIO!

"An optimist laughs to forget; a pessimist forgets to laugh."

Diner: "I see tips are forbidden here."

Waitress: "Lor bess yer, Mum, so was the apples in the Garden of Eden."

Warden: "What kind of exercise would you like to take?"

Condemned Man: "I like to skip the rope."

Roentgen Therapy and Ovarian Physiology—Rock and his co-workers used subcastrative doses of x-rays over the ovaries and pituitary in the treatment of twenty-seven patients with menstrual disorders with or without sterility. Twenty-two had proved anovulatory flow or flow which was predominantly anovulatory with occasional ovulatory cycles. No endometrium was obtained on repeated efforts from one woman, and this was presumed to be an instance of primary pituitary deficiency. Five patients had cyclic ovulation but with associated disturbances: sterility, polymenorrhea or hypermenorrhea. None of these five patients was relieved or cured. Twelve of the patients with faulty ovulation were cured, and the treatment of ten resulted in failure. If an ovulatory cycle could not be proved within three months after the completion of roentgen therapy the case was considered a failure. Patients considered cured were those in whom biopsies demonstrated ovulatory cycles three months or more after roentgen therapy, those of sterility in which pregnancy proved ovulation or those who acquired after treatment the molimina of menstruation with periodicity of characteristic flow. Three, or 13 1/3 per cent, of the patients became pregnant. The figures of cure are well above the most optimistic results reported from endocrine treatment alone. Many of the cured women were under endocrine treatment before roentgen therapy was tried. Regular ovulatory cycles began within from two to ten weeks following the first roentgen treatment. No apparent harm resulted when a subsequent series of treatments with the same dosage was given after an interval of from two or three months. Three doses, each from 50 to 60 roentgens, given over the ovaries seem harmless to the ovaries of women less than 35 years of age. Women older than this may suffer temporary or permanent cessation of follicular function. The authors believe that roentgen treatment of the pituitary offers no additional benefit. To explain the good results, they postulate a destruction by x-rays of persisting mature follicles, thus allowing a new cycle of follicle development and maturation to take place.—J.A.M.A.

Surgical Treatment of Pancreatic Cysts—Kafka describes two cases of pancreatic cyst. A woman aged 58 with a pseudocyst was treated by means of a primary pancreato-cystogastrostomy. The healing tendency seemed favorable, but the patient succumbed to a sudden hemorrhage into the intestinal tract on the ninth day after the operation. The second patient was a woman aged 56 with a pseudocyst. The first intervention resulted in a fistula and a cavity in the pancreas. A subsequent pancreatocystojejunostomy resulted in a complete cure. The author reviews the various surgical methods and evaluates the various types of anastomosis. These operations were palliative and were regarded free from danger. The fatal outcome in one of the author's cases demonstrated the possibility of complications cyst with the intestinal tract. The author advises which may arise from the anastomosis of a pancreatic against a primary anastomosis of the cyst, particularly with the stomach. Such an intervention would be permissible only in the form of Jedlička's operation; that is, a lateral pancreatogastrostomy with external drainage of the residual cavity. Otherwise, marsupialization is

to be preferred. A persistent fistula may be anastomosed with the gastrointestinal tract. If x-ray examination or laparotomy reveals, in addition, a residual cavity, it may be treated by a wide cystenterostomy, in which the danger of obliteration of the stoma does not exist to the same extent as in the presence of a simple anastomosis of the fistula with the digestive tract.—I.A.M.A.

LONG SURVIVAL FOLLOWING CORONARY THROMBOSIS

Drake reports the survival of a man (a telegrapher) for nearly forty years after coronary thrombosis. He was first seen by Drake at the age of 72, seven years before death, when he had suffered from angina for five years. The patient stated that he had experienced the same pain at the age of 40, except that at this time the pain was more severe and that it had gradually increased in intensity, came at more frequent intervals and was more easily precipitated. This state continued for several weeks, but since then the pain had not returned for twenty-seven years. At an examination in 1933 hypertension and cardiac enlargement were present. In 1935 the patient suffered a coronary thrombosis from which recovery was uneventful except for a complicating attack of arthritis. Following this he continued to have infrequent attacks of mild angina pectoris easily relieved by glyceryl trinitrate. At the age of 77 he retired. In 1938 another coronary thrombosis occurred. This attack was severe, was accompanied by marked pulmonary edema and was followed by frequent severe recurrences of pain and by cerebral embolism and left hemiplegia. He was confined to bed for four months. Infrequent attacks of angina pectoris continued. Prostatic hypertrophy, which caused nocturia, developed and unless he voided promptly on awakening an attack of angina pectoris would result. Because he feared the cardiac pain he occasionally took glyceryl trinitrate at these times to forestall an attack. On Oct. 2, 1939 he awakened with a desire to void and experienced an attack of angina pectoris which was not relieved by glyceryl trinitrate. A hypodermic injection of morphine was ordered; a half hour later he was unconscious and died within a few minutes. The body was embalmed before permission for necropsy was obtained and therefore the heart was considered unsuitable for injection studies. The heart weighed only 360 Gm. Old obstructions, with calcification, were found in the left anterior descending branch, a large branch of the left circumflex and the right circumflex artery. There were three fair-sized areas of fibrosis in the ventricular walls; the most recent one was in the posterior basal portion of the left ventricle. There was no fresh coronary thrombosis to explain the fatal attack. It seems certain that one of the three scars resulted from the myocardial infarction suffered at the age of 40. It seems that certain middle-aged patients may recover completely from coronary thrombosis and live out their span of life.

Original Articles

PNEUMONIA — ITS DIAGNOSIS AND TREATMENT

W. D. SUTLIFF, M. D.

Assistant Director Bureau of Laboratories (Pneumonia Control Division), New York City Department of Health

NEW YORK, N. Y.

PNEUMONIA DIAGNOSIS AS IT RELATES TO CHEMOTHERAPY. The diagnosis of pneumonia is so closely related to the treatment of the disease that the outline of present diagnostic practice and terminology from the point of view of therapy, is an appropriate part of the discussion of specific pneumonia therapy. A few fundamental characteristics are common to all cases of pneumonia, such as the acuteness of the disease, inflammatory reactions which lead to greater or smaller areas of consolidation, and the commonly associated bacterial infection of the lung. At this time, when chemotherapy with sulfonamide compounds is being found effective to some degree against many, if not all of the etiological agents commonly found in pneumonia, the possibility of stopping the further progress of all infections of the lung by prompt administration of sulfapyridine following diagnosis by the simplest means, such as history and physical signs, has occurred to many physicians. Chemotherapy as applied to pneumonia has become established so recently that the possibility of such a comprehensive application cannot be denied. Our knowledge of the disease has shown up to this time, however, that pneumonia is not a single entity when thoroughly considered from the standpoint of its pathological characteristics, its bacteriological characteristics and its clinical manifestations. It is necessary to determine the effectiveness of a chemotherapeutic agent against each of the many varieties of the disease, before we can be sure that all infections of the lung are favorably influenced by such chemotherapy. For the present, it is necessary to use enough diagnostic methods to thoroughly describe each case, in order that the experience may be of value in pointing out the circumstances under which chemotherapeutic agents are best used, and to find such circumstances as there may be under which they are of less value.

Lobar pneumonia has been described as a distinct pathological entity and it is generally recognized by pathologists. Classification of cases other than typical lobar pneumonias has not been so successful. The common practice is to use one term, usually "broncho" pneumonia, to indicate any one of the heterogeneous collection of pathological pictures which belong together only on the basis that they differ from typical "lobar" pneumonia.

Classification based on the presence of bacteria in the pulmonary exudate which are thought to have an etiological relationship to the disease has been somewhat more successful than classification based on pathological findings because it can be applied during life to a larger proportion of the existing cases, including some of the variable "broncho" pneumonias. The pneumococcus pneumonias as a group are the most numerous, but they are divided into types numbered from 1 to 33 and further yet unreported groups of pneumococcus strains that have individual immunological characteristics; and other microorganisms, such as Hemolytic Streptococci, Friedlander bacilli, Staphylococci may also be associated with pneumonia. A group of patients without demonstrable bacteriological cause is small, but persists in even the most carefully studied series.

As will be seen below, reports of fatality rates for etiological varieties of pneumonia treated with sulfapyridine are lower than the average fatality rates for the disease, and the desirability of using sulfapyridine in pneumonia caused by many different etiological agents is thus apparent although further study of the rarer microorganisms is needed.

Some observations have been made, however, pointing to the existence of a small number of infections by pneumococci that are resistant to chemotherapy. Pneumococcus cultures from 3 patients who had unsatisfactory therapeutic effects from the use of sulfapyridine, showed a striking degree of resistance to the bacteriostatic action of sulfapyridine in solid media. No such resistant strains have been found among microorganisms obtained from patients reacting favorably to the administration of the sulfonamide drugs. The recognition of such "fastness" of pneumococci to the action of sulfonamide drugs may become an aid in bacteriological diagnosis

Read before the General Session, Centennial meeting, Illinois State Medical Society, Peoria, May 22, 1940.

and play a role in guiding treatment, since such strains retain their susceptibility to type specific serum.

Other groups of cases that do not respond to chemotherapy have been described by several observers. Kneeland and Reimann have separately reported small groups of patients that were severely ill and had large areas of consolidation for which none of the usual etiological agents could be identified, and in which filterable virus etiology was suspected. These cases showed no therapeutic effect when treated with sulfapyridine. Charles Hendee Smith has reported that certain pneumonias in infants and children, of unknown etiology, classified as "broncho" pneumonia in his clinic do not respond to chemotherapy.

The routine recognition of the type specific pneumococcus or other etiological agent in pneumonia does not appear to have a direct bearing on the treatment of the majority of patients receiving chemotherapy, although further studies of many of the rarer microorganisms are needed in order to be sure of this point. The value of the bacteriological procedures may be summarized as follows:

1. The recognition of pneumonia is made more certain and specific by finding one of the more frequent pneumococcus types or a pure culture of any organism in sputum, in the blood or in pus from infected exudates;
2. the recognition of the presence, degree and specific cause of bacteremia in pneumonia is a valuable prognostic aid;
3. the presence of sulfapyridine-fast organisms in cases that do not respond to chemotherapy may lead to the effective use of other therapy;
4. the recognition of cases which are not due to one of the usual etiological agents may be correlated with lack of therapeutic response;
- and 5. the recognition of type specific pneumococci is essential to the use of type specific serum therapy in cases for which serum is required.

Every practicing physician realizes that there are many patients who have what appears to be an acute inflammatory reaction in the lung with fever or other evidences of infection that cannot be further classified. The importance of one large group of such cases is demonstrated by the accompanying tabulation of deaths attributed to pneumonia, reported to the New York City Pneumonia Control Division during 1937 (table

- 1). Pneumonias, unassociated with other disease, numbered 6,504. Slightly more than one-half were called "lobar" pneumonia, and slightly less than one-half were called "broncho" pneumonia. Four thousand nine hundred and six other patients (in table 2) were said to have pneumonia associated with a second disease of equal or greater significance. Only 535 of these secondary pneumonias were called "lobar," and 4,371 were called "broncho" pneumonias. It is in the large group of secondary "broncho" pneumonias that classification is especially difficult. Indeed, it is sometimes difficult to make reasonably certain that an acutely developing infected exudate is present because of the simultaneous presence of other exudate in the lung. Bacteriological examination of the sputum may show several different bacteria that are normally found in the upper respiratory tract. Pathological studies indicate, however, that such pneumonias are often recognized during life by the usual methods of examination. A practical measure for grouping such secondary pneumonias is to place them together according to the disease or condition with which they are associated. The common term "postoperative" pneumonia is an example of such terminology.

Another group of acute cases that are not easily classified are the mild respiratory infections which run the course usually called "flu" or "grippe," in which pulmonary changes, although frequently present, may be so slight or evanescent that repeated x-rays are required for their demonstration. No adequate figures on the incidence of such mild pneumonias have been prepared and their possible relationship to the cases with more severe symptoms has not been determined. Bacteriological diagnosis is sometimes possible when typical sputum is available, but more often it is not. Since the reliability of sputum bacteriological diagnosis in the diagnosis of pneumonia has been worked out only by studies in severe cases that offered postmortem material, positive blood cultures, or pus from infected exudates for comparison, the etiological significance of organisms obtained from mouth or sputum cultures in such mild cases of the disease may be called in question.

It can be seen from this résumé that a substantial minority of pneumonia cases, as they come to the attention of the physician are not to be easily described in pathological or bacterio-

logical terms. The recognition of all these conditions is important, however, and it has become more important since the advent of chemotherapy which may, from the studies conducted in the past two years, be applicable to nearly all pneumonias. It is suggested that a scheme of classification, such as the following be used, combining what is useful from pathological, from bacteriological and from clinical studies:

PNEUMONIA DIAGNOSIS AND CLASSIFICATION

Pneumonia is an acute infection of the lung, producing inflammatory exudate in the parenchyma of the lung, which may be recognized by history, physical signs, x-ray and bacteriological examination. Cases may be classified as follows:

1. Lobar pneumonia or bronchopneumonia (any case without characteristic features or lobar pneumonia). State number of lobes involved.

2. Bacteriological etiological agent or agents; state whether bacteremia is present, absent or unknown.

3. Other co-existing disease.

The primary question as to the extent of the usefulness of sulfonamide drugs depends upon observation of therapeutic effects in all kinds of pneumonias and it is recommended, now that many studies have been made of pneumonias that may be most easily classified, that some attention be paid to these other less easily classified cases. Such studies are a necessary first step in arriving at the point where sulfonamide drugs may be considered the therapy of choice for all patients in which pneumonia is diagnosed as the result of history, and physical examination alone.

THE FATALITY RATE OF PNEUMONIA TREATED WITH SULFAPYRIDINE

During the past three years, since the publication of the report of Evans and Gaisford, many similar studies of the effectiveness of sulfapyridine in the treatment of pneumonia have been carried out and a summary may now be made. I do not wish to exaggerate with regard to the finality or the preciseness of the information to be gained by summarizing these papers. The comparison of fatality rates in series of treated cases reported by many different physicians is not a precise method of study. The answers to

certain questions, however, are best obtained in this way:

1. Does sulfapyridine decrease the fatality rate of pneumonia?

2. Does sulfapyridine produce an effect on the fatality rate of pneumonia complicated by bacteremia?

3. Does sulfapyridine produce an effect on the fatality rate of pneumonias of various etiology?

4. Does sulfapyridine produce effects on the fatality rate of pneumonia in patients of different ages?

5. How does sulfapyridine compare with serum therapy in its effect on the fatality rate of pneumonia?

It is believed that answers to these questions are to be obtained by reviewing and summarizing the reported studies, grouping together such studies as have been carried out along similar lines. Conclusions are valid if suitable qualifications are made. One may say that physicians have usually studied series of cases that came within the scope of easy classification; that is, all primary lobar pneumonia, including a variable proportion of primary bronchopneumonias, (usually those for whom significant bacteriological results may be obtained) with a tendency to emphasize the more severely ill cases which are readily recognizable without the aid of the roentgen ray.

The striking reduction of the fatality rates in series of pneumonia patients treated with sulfapyridine as the only curative agent, is now common knowledge. This is best illustrated by studies in which approximately half of each series of patients admitted to an institution during a given period, were impartially selected to be given sulfapyridine, either by the alternating case method, or by their admission to separate but similar divisions of the hospital; and the other half were treated symptomatically, without sulfapyridine or other therapeutic agents thought to have a curative action. Fatality rates for adults are thus obtained (table 3) of 4.6%, or 21 deaths in 455 sulfonamide drug cases as compared with 13.6%, or 58 deaths in 425 cases that received no sulfapyridine. The reduction in fatality rate is 66.2% of the fatality rate among the controls. Similar smaller scale studies have been carried out for pneumonia in children, with even more striking results, as

shown in the same table. In view of the opinion occasionally held, that low fatality rates and mortality rates from pneumonia reported during the past two seasons may be due to an accentuation of the long term downward trend of pneumonia mortality from general causes, it is fortunate that adequately controlled data, showing striking reductions in the fatality rate of comparable groups of cases, are available.

When the total of sulfapyridine-treated cases reported in the literature to May 1, 1940, is summarized (table 4) a fatality rate of 7.7%, or 382 deaths in 4,931 cases is obtained. This summary includes all series of ten or more patients, which appeared to constitute the whole experience of the author at a given time and place, usually in hospital practice. Certain irregularities, such as the inclusion of relatively small numbers of children under 12 years, with adults or of relatively small numbers of patients receiving serum treatment, without separate discussion which were thought to be without significance, by the authors have not been corrected.

A summary of sulfapyridine-treated cases for whom blood cultures were performed is also given in table 4. Patients with blood invasion, if untreated, are known to have case fatality rates of from 40% to 90%. A fatality rate of 24.8% or 82 deaths in 330 bacteremic patients is good evidence of the life-saving effects of sulfapyridine. The 15.7% incidence of bacteremia, or 330 bacteremic cases among 2,393 cases for which blood cultures were routinely carried out, is somewhat lower than that often reported. It would appear that the average severity of the pneumonia cases reported as treated with sulfapyridine may be less than the average severity of many larger series reported in the past.

Two sources of uncertainty with regard to the bacteremia incidence should be mentioned. The authors often failed to state specifically that performed, but usually stated that "routine" blood cultures were performed. It is also possible, since the point was usually not discussed, every patient in the series had a blood culture that blood cultures were made in many cases only after treatment had been begun, when organisms originally present in the blood were no longer demonstrable, due to the presence of drugs in the blood. Only one series was found, in which all patients had blood cultures before treatment, and the experiences of other years were available

for comparison. Wood and Long of Johns Hopkins Hospital found that when cases seen in years before sulfapyridine became available were compared with the series of cases seen after sulfapyridine became available, the two series showed a similar proportion of cases with positive blood cultures, provided only those blood cultures taken on admission to the hospital, were considered. The disease as treated with sulfapyridine appears to have been of the same average severity as in previous years in this series, and the therapeutic effects of sulfapyridine treatment were excellent.

The next table, table 5, shows the low fatality rate of sulfapyridine-treated pneumonia patients classified as to etiological agents. The strikingly uniform results, especially since they include type 3 cases hitherto not treated specifically with serum, are worthy of special note.

The favorable effects of chemotherapy are apparent in all age groups. Sulfapyridine cases reported to the Pneumonia Control Division of the New York City Department of Health have been classified according to age in the accompanying table (6), showing a maximum of 14% mortality, in children under two years of age. The differentiation according to age appears to be particularly important as it affects infants and children. The next table (7) shows the results in a total of 1,665 children reported in the literature, most of whom were not clearly described as to age, and for comparison the differing fatality rates; 4.1% in children two years of age or less and 1.2% in children from three to 12 years of age inclusive, where such a differentiation was made.

Comparisons have been made by a number of workers between the fatality rates resulting from sulfapyridine used alone, the fatality rates resulting from type specific serum therapy used alone, and the fatality rates resulting from sulfapyridine and serum therapy used together. These comparisons have not usually been made by means of series chosen in an impartial manner. The number of cases so reported is now considerable, and because blood cultures have been carried out routinely in these series, they may be discussed on the basis of the average severity of each group determined from the incidence of bacteremia. The first comparisons were made between sulfapyridine-treated cases

and serum-treated cases (table 8). Here it can be seen that the fatality rates are near 10% for both types of therapy. The incidence of bacteremia was similar — approximately 20% in patients receiving each kind of therapy. The fatality rate of 23.7% in bacteremic sulfapyridine-treated cases was somewhat lower than the fatality rate of 31.1% in the bacteremic serum-treated cases. The similarity of the results from the use of the two different kinds of therapy is striking.

It has been thought by certain investigators, largely as a result of animal experimentation, that sulfapyridine treatment and serum treatment used together, would produce even more favorable results than either used alone. This has not proven to be the case in practice, and a few reports of small numbers of cases have indicated that the combined therapy was associated with a higher fatality rate than the use of sulfapyridine alone. This may have been due to the lack of impartial selection of cases and because of the small numbers involved.

A larger experience in which all three methods are compared is shown in table 9. The fatality rate in cases treated with either sulfapyridine or serum alone was approximately 11%, although the proportion of bacteremic cases in the serum-treated series was higher than that in the sulfapyridine-treated series. Sulfapyridine and serum were used together in cases with a much higher incidence of bacteremia than where either was used alone in the hope that the combination would produce more striking results than either therapy alone. A satisfactory result was obtained, as indicated by the fatality rate of 18.4% for the whole series, but the fatality rate in the bacteremic cases treated with both agents was somewhat higher than the fatality rates of cases treated with either sulfapyridine or serum therapy alone.

This summary of the comparisons of the three possible variations in the routine use of sulfapyridine and serum therapy, published to May 1, 1940, shows that the fatality rates from the use of sulfapyridine or serum alone are similar, but that the combination of the two must be studied further before its superiority is clearly demonstrated.

The extent to which sulfapyridine has been applied to pneumonia has been described, and in

addition its favorable effects on the fatality rate of the disease have been described when pneumonia is due to many different bacteria; in patients of all ages; and in cases of all degrees of severity, as indicated by its effect in the presence of bacteremia. It is pointed out that sulfapyridine has a favorable effect on all patients found to have a pneumonia that is readily recognizable and classifiable, with the exception of a few cases where sulfapyridine-fast microorganisms have been noted, or where thorough bacteriological studies have demonstrated none of the usual etiological agents. Other information in published reports is not so suitable for summarization, such as the striking symptomatic effects on the disease; the studies of pneumonia deaths occurring in sulfapyridine-treated series; the lack of striking effect in purulent complications of pneumonia and endocarditis, the variability of blood concentration following oral administration, which makes thoroughly rational dosage difficult, the use of sodium sulfapyridine intravenously or by other routes, and the toxic reactions. These subjects are better discussed by illustrations drawn from carefully studied small series of patients. The newer drugs, of which sulfathiazole has now been released for use by the United States Food and Drug Administration, will also require separate consideration.

At the present time curative therapy in pneumonia is best undertaken with sulfapyridine or sulfathiazole due to their striking therapeutic effects, their low cost and their convenience. Thorough diagnosis is of great importance as a prerequisite for treatment, in order to recognize the presence of pneumonia and to classify it. Favorable effects of the application of sulfapyridine therapy in secondary bronchopneumonias as a group, mild cases of the disease as a group, and respiratory diseases other than pneumonia have not yet been reported. The toxic effects of sulfapyridine and sulfathiazole are such that their use without a clear-cut indication is not warranted. Serum therapy is available, provided bacteriological studies are promptly made, for patients with serious toxic effects from chemotherapeutic agents and for those that do not respond favorably, in a reasonable length of time, such as 24 to 48 hours.

TABLE 1
PNEUMONIA — PRIMARY CAUSE OF DEATH IN
VARIOUS AGE GROUPS, NEW YORK CITY, 1937

Age group	Broncho	Lobar	Total
Under 1 year	668	161	829
1- 4 years	177	187	364
5-19 years	70	163	233
20-39 years	186	561	747
40-59 years	547	1,255	1,802
60 years and over	1,362	1,167	2,529
All ages	3,010	3,494	6,504

TABLE 2
PNEUMONIA — SECONDARY CAUSE OF DEATH IN
VARIOUS AGE GROUPS, NEW YORK CITY, 1937

Age group	Broncho	Lobar	Total
Under 1 year	386	24	410
1- 4 years	115	14	129
5-19 years	103	21	124
20-39 years	298	93	391
40-59 years	1,059	214	1,273
60 years and over	2,410	169	2,579
All ages	4,371	535	4,906

TABLE 3
FATALITY RATES OF SULFAPYRIDINE-TREATED
PNEUMONIA CASES COMPARED WITH CASES
RECEIVING NO CHEMOTHERAPY AND NO SERUM
THERAPY. SUMMARY OF REPORTS IN THE
LITERATURE TO MAY 1, 1940

	Sulfapyridine treatment			No Sulfapyridine treatment		
	No. of cases	No. died	Per cent died	No. of cases	No. died	Per cent died
Adults	455	21	4.6	425	58	13.6
Children	176	2	1.1	182	13	7.1

TABLE 4
FATALITY RATE AND BACTEREMIA RATE OF
ADULT SULFAPYRIDINE-TREATED PNEUMONIA
CASES REPORTED IN THE LITERATURE
TO MAY 1, 1940.

	FATALITY RATE		
	No. of Cases	No. died	Per cent. died
Total cases	4,931	382	7.7
Bacteremic cases	330	82	24.8

	BACTEREMIA RATE		
	No. of cases	No. with bacteremia	Per cent. with bacteremia
Cases on which blood cultures were taken	2,393	330	13.7

TABLE 5
SULFAPYRIDINE-TREATED PNEUMONIA CASES
CLASSIFIED ACCORDING TO BACTERIOLOGICAL
DIAGNOSIS, FROM REPORTS IN LITERATURE TO
MAY 1, 1940.

Bacteriological diagnosis	Number of cases	Number died	Per cent. died
Pneumococcus Type 1	807	40	4.9
Pneumococcus Type 2	336	18	5.4

Pneumococcus Type 3	560	60	10.7
Pneumococcus Type 4	137	10	7.3
Pneumococcus Type 5	175	7	4.0
Pneumococcus Type 6	73	3	4.1
Pneumococcus Type 7	224	7	3.1
Pneumococcus Type 8	164	10	6.1
Pneumococcus Type 14	76	6	7.9
Pneumococcus Type 19	63	7	11.1
Other pneumococcus types	484	48	9.9
Total pneumococci	3,099	216	6.9
Other microorganisms	131	12	9.1
More than one microorganism	48	6	12.4
Bacteriological examinations not done, or unsuccessful	774	21	2.7
Total cases	4,052	255	6.3

TABLE 6
FATALITY RATES ACCORDING TO AGE OF SULFA-
PYRIDINE-TREATED CASES REPORTED TO THE
NEW YORK CITY DEPARTMENT OF HEALTH
(TO NOVEMBER 30, 1939).

Age group	No. of cases	No. died	Per cent. died
Less than 2 years	14	2	14.3
2 to 12 years	87	0	0
13 to 19 years	51	0	0
20 to 39 years	146	6	4.1
Over 40 years	281	25	8.8
Age unknown	20	1	5.0
Total	599	34	5.7

TABLE 7
FATALITY RATE OF PENUMONIA IN CHILDREN
TREATED WITH SULFAPYRIDINE, FROM REPORTS
IN THE LITERATURE TO MAY 1, 1940.

	Number of cases	Number died	Per cent. died
Ages — 0 to 12 years (30 reports)	1,665	61	3.7
Ages — 0 to 2 years (4 reports)	188	8	4.1
Ages — 3 to 12 years (4 reports)	165	2	1.2

TABLE 8
COMPARISON OF RESULTS OF SULFAPYRIDINE
TREATMENT WITH RESULTS OF SERUM TREAT-
MENT, FROM REPORTS IN THE LITERATURE
TO MAY 1, 1940.

	Sulfapyridine- treated cases		Serum- treated cases	
	Number	Per cent.	Number	Per cent.
Total cases	584		802	
Cases died	62	10.6	88	10.9
Cases on which blood cultures were taken	575		799	
Bacteremic cases	122	21.2	151	18.8
Bacteremic cases died	29	23.7	47	31.1

TABLE 9
COMPARISON OF RESULTS OF SULFAPYRIDINE
TREATMENT WITH SERUM TREATMENT, AND
WITH COMBINED SULFAPYRIDINE AND SERUM
TREATMENT FROM REPORTS IN THE LITERA-
TURE TO MAY 1, 1940.

	Sulfapyridine- treated cases		Serum- treated cases		Sulfapyridine and Serum- treated cases	
	Number	Per cent.	Number	Per cent.	Number	Per cent.
Total cases	718		322		271	
Cases died	83	11.5	35	10.8	50	18.4
Cases on which blood cultures were taken	718		322		271	
Bacteremic cases	96	13.3	72	22.3	107	39.4
Bacteremic cases died	27	28.1	21	29.1	38	35.5

THE NEED FOR AND ORGANIZATION OF POSTGRADUATE MEDICAL EDUCATION AS A PART OF A STATE EDUCATIONAL PROGRAM

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To a group like this, the need for postgraduate medical education is perfectly obvious. But at the turn of the century it was not so clear. Teachers of obstetrics, specialists, health authorities and people interested in public welfare suspected that too many mothers and babies were dying as a consequence of pregnancy and birth. However, there existed little recorded data to prove it; there was no national registration of births. Some states required adequate records, but it was not until 1915 that the so-called "Registration area" was established in the Census Bureau.

When the statistics of the census revealed the true consequences of childbirth, suspicion turned to conviction that child-bearing was followed by too many deaths and too much morbidity, and that something must be done about it. But what?

By 1920 the census reports revealed a sorry picture; 15,000 mothers were dying every year, to say nothing of the sad trail of morbidity. More than 75,000 babies born alive died before they were a month old, and another 80,000 were stillborn. These 160,000 deaths of mothers and babies (not including the 70,000 estimated abortions) soon, even if slowly, aroused professional and lay opinion to the realization that the obstetrics practice in the early 1920's was at a low

ebb. This conviction was further strengthened when subsequent investigation revealed that more than half of the deaths were preventable.

At this time the rapidly falling birth rate added to the gravity of the situation, so much so that the 30 per cent. decrease in the birth rate rendered solution of the question not only medical but also a great economic problem. Statisticians saw in it a real threat to population growth. There are only three factors governing population increase: births, deaths and immigration. In as much as immigration has all but disappeared, it is obvious that the hope of population growth lies in the excess of births over deaths. When deaths exceed births economic disaster impends. Expert economists and statisticians, long since, voiced alarm at the prospect of decreasing population.

Now it should be made evident to all by the decreased school population in the lower grades all over the country, which is an economic misfortune and evidence of a decadent tendency. In the face of a decreased number of conceptions, a death rate stable for two decades, the disappearance of immigration, only one factor is left to counteract the decreased birth rate; namely, the preservation to maturity of every conception that does occur and the birth of a healthy uninjured baby. It seems a unique situation that the chief danger to population growth and our national life should be almost solely dependent on the proper practice of obstetrics and the after-care of the baby.

It has been thoroughly and convincingly demonstrated by the leaders in our specialty that clear-headed, dextrous and conservative obstetrics will save for future citizenship a majority

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of the babies who now perish. Furthermore, public welfare demands that the known, thoroughly demonstrated life-saving measures be employed throughout the country to the end that infant lives may be saved, not only as babies in the home but also as future citizens, whose social importance is emphasized by their decreasing numbers.

And how is this to be accomplished? By opportunities for better education of physicians and education of the public.

1. BY BETTER UNDERGRADUATE TEACHING

It is self-evident that if the young physician is to enter the practice of medicine and grow more competent by experience, he must at graduation be thoroughly grounded in the fundamentals of obstetrics. I believe we can safely assert that the teaching of obstetrics in the medical schools is steadily improving and that more schools are giving adequate instruction.

2. EDUCATION OF THE PUBLIC, PARTICULARLY OF EXPECTANT MOTHERS

- a. By general publicity regarding the necessity of competent obstetric care.
- b. By mothers' classes giving personal instruction or by correspondence.
- c. By every physician spreading the "gospel of good obstetrics" by careful instruction of his pregnant patients.

3. POSTGRADUATE EDUCATION OF THE PHYSICIAN

I have been asked by your committee to discuss this last subject particularly and to tell about our efforts in Minnesota, which I do without any thought of setting it up as the ideal plan. Our plans have varied and in a great measure have paralleled those of many other states during the last decade. In as much as approximately 80 per cent. of pregnant women are attended by general practitioners, it is obvious that postgraduate education is a very important factor.

During the first fifteen years, after 1915, efforts to reduce maternal and new-born mortality were more or less sporadic, coming largely from volunteer and official public health agencies, like the Child Health Association and state boards of health. Out of these sporadic but idealistic

attempts have grown a great movement for maternal and child welfare.

One of the most notable influences in this movement has been the organization, under the leadership of Dr. Fred L. Adair, of maternal welfare committees in each state, unified and coordinated into a great force by the American Committee on Maternal Welfare, Incorporated, of which Dr. Adair is chairman. The work of this committee has been largely educational, both professional and public. One of its greatest accomplishments has been that of drawing into the movement all agencies interested in maternal and child welfare.

By 1930 the medical profession became definitely interested in a program of education of physicians by physicians, with or without assistance of public health agencies, which became a definite part of medical philosophy and teaching.

Physicians were found very receptive; they desired opportunities for refreshing their knowledge and adding the newer advancements in obstetrics. The earlier efforts consisted of sending out volunteer speakers, singly or in groups, to county societies. Traveling expenses might be paid, but other compensation seldom. Later the attempts became a little more systematized with a specific program offered by public health agencies with the assistance of organized medicine. Expenses were paid together with an honorarium. In some states a single man or a pair, usually an obstetrician and a pediatrician, were employed to give instruction following a definite circuit through the state. They were also available for lay health talks and consultations with physicians.

This policy resulted, in certain states, of supplying full-time consultants with or without specific educational duties. From the above plans it was assumed that the best place to carry on a program was in the practicing physician's own community. This assumption is not completely logical because the facilities for teaching, clinics, etc., are not always available, and the exigencies of private practice often interfere with attendance.

Medical schools now began to offer opportunities for physicians to come in for short periods of intensive study of obstetrics and related subjects. The physician usually paid his own

way. Later, some public health and organized medical bodies began to financially sponsor individual attendance upon formal courses or clinics. Meanwhile public health nursing, largely centered around maternal and infant care; county health units, better hospital facilities, and the development of hospital practice were developing.

In Minnesota a program has been carried on for nearly twenty years. We went through the various stages of volunteer speakers, paid lecturers, but at no time did we have area consultants. From the beginning there has been sympathy and cooperation between the state health department, the state medical society and the university. Perhaps the community of feeling and cooperation is the reason for whatever success our combined efforts have accomplished. We hope we may be pardoned for feeling that we have had some measure of success, in as much as our maternal mortality had dropped from 5.2 per 1,000 live births in 1915 to 2.7 in 1939, compared to 4.4 for the nation, and infant mortality in Minnesota fell from 70.1 per 1,000 live births in 1915 to 35.8 in 1939, compared to 51.0 for the nation.

Up until comparatively recently we had only a few outlying organized public health districts. Through all these years we have made steady progress largely because the profession has been unified in obstetric thought. We have one medical school. (Fifty per cent. of the physicians practicing in Minnesota graduated from this university.) The obstetric leadership was conservative. Comparisons of the obstetric knowledge of our graduates on the basis of certain national examinations indicated that they were well equipped with sound fundamentals. Obstetric practice was gradually shifting into the hospitals where control could be exercised. Minnesota has a rather unusual distribution of physicians because of the presence of only a few large cities and the Mayo Clinic. Of the nearly 2,500 members of the Minnesota State Medical Association only 1,000 practice outside of Minneapolis, St. Paul, Duluth and Rochester. Obstetric practice in these cities has become largely a hospital affair. (Last year the percentage was 96, and in the state as a whole it was 64 per cent.) Our efforts have been concentrated, therefore, on physicians practicing outside the four larger cities.

At one time we believed that the best place to carry on the courses was in the physician's own community. Perhaps this was because we did not have our Center for Continuation Study. After having tried both methods, we now know that the practicing physicians themselves as well as the staff would rather have the program at the University. The State Health Department is also in agreement and sponsors such courses with the University of Minnesota and the State Medical Association. At the University the physicians spend from three to six days in concentrated study. They live together in the Center for Continuation Study building. With the exception of clinics, all their classes are held there.

The Center for Continuation Study building is the brain-child of a great medical statesman, the late President of the University of Minnesota, Lotus D. Coffman, following out his idea of a state-wide campus or "A University for all the People." It is designed to offer a place for continuation study in any department of the University. It offers lecture, study and seminar rooms, a chapel (used also for lectures), lounge, large dining room, served from the Students Union, and hotel rooms with bath, where the attendant upon courses may live alone or with his wife during the courses, and to top off its facilities is a garage in the basement where he can park his car, at a small fee, during his whole stay. In short, it offers all the facilities of a fine club in the scholastic surroundings of a great university.

In addition to the information they obtain from the faculty, there is the additional advantage of discussion with practitioners working in districts similar to theirs. Instead of a few hours of instruction given under conditions at home (subject to professional calls all the time) there is nothing to interfere. The courses vary from 21 hours for three days to 36 hours for six days. In the three-day courses the evenings are occupied. In the six-day courses they are not. The expense of such courses is room — \$1.25 per day, meals \$1.50 per day, tuition \$15 for three days and \$25 for six days (no extras).

We have had two classes of registrations in our courses for obstetrics, premature and newborn care — voluntary and sponsored. Both types attend the same courses. In the case of those sent by medical societies, the expenses have

been paid by the health departments of Minnesota, North and South Dakota. The men are selected by their own society members. The University gives the course. The public health department pays the bill. The responsibility for attendance and interest is fixed on the sponsored registrant by his group back home as he is expected to come back and tell what he has learned.

During 1938-39 ten physicians were sent from North Dakota. During 1939-40 Minnesota sent 54 representatives to the three-day course on Problems of New-born and Premature Infants, and 45 representatives to a three-day course in Obstetrics. South Dakota also sent 20 representatives to this course. North Dakota is sending 30 representatives to a course in Diseases of Infancy and Childhood this month after having sent 25 to the course in Venereal Disease. South Dakota is sending 20 to the Pediatric course. They plan to send 30 physicians to a course in Obstetrics this fall. At the present time we believe that this method is superior to sending courses to the membership, and it is apparently not any more expensive.

Good obstetric and pediatric programs consist of lectures, demonstrations, clinics and round-table conferences. Groups varying in size from 25 to 75 physicians may be taught. Each lecture is followed by a period during which questions can be asked, and a general round table is held each day. Only teachers expert in their field are asked to serve on the faculty. They should be prepared to answer objections to any statements they make. All teachers are cautioned to remember that they are talking to mature men who have had obstetric experience probably under conditions less favorable than the teachers. They should also remember that these men want to learn how to practice better obstetrics.

We have had a favorable reaction to our courses. We believe that until a better method presents itself, we shall continue under this plan. The program in obstetrics and pediatrics is part of a general program in all the fields of medicine as well as all the other professional fields. The organization of this work is under the direction of Dr. William A. O'Brien, Associate Professor of Preventive Medicine and Pathology and Director of Postgraduate Medical Education, to whom I am indebted for all of the data and much of the language of this paper. Intensive

postgraduate courses are given not only in obstetrics and gynecology but also in all other branches of medicine.

So you see that at Minnesota we take the matter of postgraduate intensive short courses for practitioners very seriously. The faculty is composed of highly trained men within the medical school, together with equally well trained teachers about the state, particularly from Duluth and Rochester and the State Department of Public Health.

As we have said, the need is great, country physicians demand and appreciate it, county societies and state health authorities think so much of it that they furnish money for selected men to attend. Why is all this done? Certainly not only for the benefit of the individual physician, but that he may return to his community with his added and refreshed knowledge and enthusiasm inspired to help raise that community to the highest possible level of obstetric efficiency; to make the hospital, or in its absence the local professional group the center for disseminating to the nurses, practitioners and the public, the establishment of mothers' classes, educational classes for other women; in short to make his community obstetric conscious. The whole lay public may also be educated — and they welcome it for they realize that it is for the community welfare.

Having always been a teacher and practitioner in a large city, I have been accused of not understanding the rural problems. Fearing that this might be true, I asked Dr. John H. Moore of Grand Forks, Chairman of the Maternal Welfare Committee of North Dakota, to give me the real rural viewpoint, for he has spent his life studying North Dakota hospitals. He says: "The problem of the rural hospital in dealing with obstetric patients is a difficult one, but by no means insurmountable. North Dakota has no maternity hospitals. While some of the larger general hospitals have well organized maternity departments, isolation of maternity patients is difficult and must naturally depend upon the efficiency of the nursing personnel and complete coöperation of the medical staff. This coöperation has been effective.

"I have failed to find any evidence of cross-infections or epidemics of puerperal sepsis. This may be luck but I am inclined to credit this to the efficiency of the entire personnel. Hospitals

have solved the problem by:

1. Devoting one floor to obstetrics.
2. Providing small wards of two to ten beds.
3. Delivery and labor rooms.
4. Sterile supplies.
5. Well trained nurse anesthetists.
6. Previously prepared intravenous outfit and solutions for use in hemorrhage or toxemia, or obstetric shock.
7. Provisions for prompt packing in cases of hemorrhage.
8. An incubator for prematurity.
9. Adequate nursery space.
10. Infant diet kitchen.
11. A laboratory with well trained technician.

"If a community is enterprising enough to have a hospital, it seems evident that it must have at least one physician on its staff with enough scientific interest to assure a minimum laboratory service. An enterprising physician can train an intelligent nurse to do a majority of the usual laboratory procedures.

"I realize that as I have tried briefly to picture the needs of the rural hospital for the obstetric patient, omissions have occurred, but there is one other important item, namely the obstetric record. No hospital is too small or too rural to omit it. For this I know of nothing better than the Duluth obstetric record, which is widely used in North Dakota hospitals."

Thus you have illustrated what the physicians of North Dakota, which is almost entirely rural (there are no large cities) are doing for their communities, for themselves and for the cause of good obstetrics. And it is bearing fruit, too! Dr. Moore in great glee informed me that their mortality rate was one point better in North Dakota than Minnesota's.

Finally we may say that twenty-five years ago the consequences of Childbirth were at such a low ebb that enlightened professional opinion demanded better obstetric care. By 1930 progress had been such that a great movement was finally inaugurated which included: better education of the medical student and greater enlightenment of the public. This movement also included continuation of the education of the practicing physician by concentrated courses and his return to his community to make it the center of public and professional cooperation for better obstetrics and the saving of mothers and babies.

DISCUSSION

STAFF SUPERVISION

William Cooley, Sr., M.D., Peoria: In the hospital with which I am connected operative deliveries have shown a marked decrease. This may be due partly to the Maternal Welfare activity and partly to our recent staff organization.

Last year there were 2,705 births in Peoria including those who came from out of the city. 1,596 of these births were from patients living in Peoria. About 94 per cent. of those living in Peoria were born in hospitals. In my early years of practices about 94 per cent of the births were in the home. The maternal mortality among Peoria residents for 1937, 1938 and 1939 was 11, 6, and 3, respectively or 5.6, 3.5, and 1.9 per 1,000 live births, criminal abortions included.

The hospital with which I am most actively associated has 52 active and 126 associate members. The latter have the same privileges as the active members except they cannot vote or hold office.

Last year 88 doctors attended 1,024 deliveries in the Methodist Hospital. To make rules and regulations for that many doctors to follow, when there have been very few or none and not have any dissatisfaction is rather difficult. However, we have had very little trouble. Many of those who objected most strenuously at first are now among the most cooperative.

Qualifications for this service are the same as for staff membership. Plus the additional requirement that at least 50 per cent. of his practice is in the field of obstetrics and/or gynecology. Members of the attending staff of other hospitals, whose qualifications meet the requirements of our hospital, are permitted to attend their patients under the same rules and regulations governing the obstetrical staff.

1. Graduate of a recognized medical school.
2. Legally licensed to practice in the State of Illinois.
3. Qualified for membership in his component county medical society.
4. Practicing within a reasonable distance.

In most of the obstetrical complications the new hospital rules require consultation with a competent consultant. Requirements of a competent consultant: 1. Diplomate of the American Board of Obstetrics and Gynecology; 2. a fellow of the American College of surgeons, coming under the classification of obstetrics and gynecology; 3. one year internship in a recognized hospital, one year residency in an approved hospital in obstetrics and gynecology, and five years practice 50 per cent. of which has been in the field of obstetrics and gynecology; and 4. equivalent training and experience subject to the approval of the chairman and vice chairman.

Consultation with a competent consultant is required in all of the following major procedures.

1. Prolonged labor — dystocia (24 hours).
2. Cases requiring cesarean section.
3. Difficult breech presentations.
4. Difficult forceps cases or versions.

5. Occiput posterior presentations requiring forceps or version.
6. Other complicated cases such as: eclampsia, placenta previa and hemorrhage.
7. Every pregnant puerperal patient with a major medical or surgical complication.

At first it was sometimes difficult to get the attending men to request consultation for as Adair says, "Unfortunately, the ones who mind it the most are often those in greatest need of it. It is best to consider a consultation as a helpful conference rather than an arbitrary decision. It should be regarded as being of educational as well as protective value. Consultation should be encouraged and, if necessary, insisted upon whenever the interest of the mother or baby is in jeopardy."

When the staff members understood that it was to their interest as well as the patient's they fell right into line with the idea. Their attitude now has changed and they are glad their patients have the additional security which competent consultation affords. When consultation is required by hospital rule it is the usual practice for the consultant to charge no fee where payment of such a fee would be a hardship.

When a doctor is admitted to the staff and wants to do major surgery he is permitted to do so on the basis of unit credits, which are based on an individual's training and experience. Most of you are no doubt familiar with unit requirements. If he has six or more unit credits he will have unlimited privileges in general surgery. Less than six his work in major surgery has to be supervised until he acquires the required number of units. Time will give him the required number of units since he gets one unit credit for each two year's practice.

Maternity rules are similar to those established by the Chicago Board of Health for obstetrical division in that city. No doubt all of you are familiar with these regulations.

1. Gloves must be worn for all examinations and deliveries. Hands must be scrubbed for ten minutes before putting on the gloves.
2. Do as few vaginal or rectal examinations as possible.
3. Except in postpartum emergency the doctor must be present when pituitrin is given. If given antepartum the dose must not exceed five minims and patient must be on the table ready to deliver. Reasons for giving pituitrin must be recorded.
4. Everyone in the birthroom must be properly masked.
5. All cases of postpartum infection are to be transferred from the obstetrical department and placed in isolation. Morbidity is defined as any case reaching a temperature above 100.4 on any two successive postpartum days after the first postpartum day. The probable cause should be determined.
6. No douches or intravaginal treatments should be given in the maternity section postpartum unless absolutely indicated.

7. All normal babies are to be put on the regular feeding routine. All under six pounds should be weighed before and after nursing.

8. All circumcisions must be done with strict surgical asepsis.

9. The use of analgesics during the labor shall be restricted to a minimum, thus lessening the danger of asphyxiation of the baby and the number of unnecessary operative deliveries. Morphine should not be given within four hours of the expected time of delivery. Anesthesia: Ether and gas are preferred and they only near end of first stage and in second stage. Chloroform and spinal anesthesia should not be used.

10. Large doses of oxytocics are discouraged. I refer to quinine and pituitary extract. Quinine has to a large extent been discontinued before delivery except in small doses because of the effect on the baby. All recognize the danger of large doses of pituitary extract and while we have not been able to control the dosage entirely we have made it a rule that when it is given antepartum the dose must not exceed five minims and patient must be on the table ready for delivery, except when smaller doses are used for the induction of labor. In all cases where it is given the attending physician should be present.

Supervision of resident physicians and interns: The administrator of our hospital has control and authority over all resident physicians and interns. He is responsible for the good conduct and efficient administration of internal affairs as pertaining to resident physicians and interns. The intern of the obstetrical service is required to see each patient immediately on admission and obtain:

1. History and make a physical examination.
2. Diagnose position and presentation.
3. Take the blood pressure.
4. Make rectal examination only.
5. Notify attending physician of his findings.

He is not permitted to assist at necropsies or at infected operations. It is his duty to scrub as far as possible for each delivery. He is expected to assist at all cesarean sections. The intern on the obstetrical service should not relieve on other services, neither should the interns on the other services relieve on the obstetrical service.

In cases of abortion the obstetrical service requires one competent consultant to be chosen either from the surgical, gynecological or obstetrical divisions of the active staff or the associate medical staff. The consultant must examine the patient and satisfy himself concerning the necessity for the procedure and record his opinion on the consultation sheet.

Obstetrical service meetings are held once a month and all members of the active staff in the Obstetrical Service are expected to attend. A representative from the Obstetrical Service is on the Medical Records Committee. This man makes reports at regular service meetings concerning his findings in the obstetrical hospital records. Missed diagnoses, mortality and morbidity reports and the handling of cases are

brought up for discussion. Morbidity records and complications are discussed informally and in detail as well as reasons for maternal deaths. These discussions are impersonal; the doctors and patients names not being mentioned.

Besides the monthly service meetings we have weekly pathological conferences, and all the services are included. Any qualified physician who is interested is welcome to attend. They are conducted largely by the resident staff who are in a position to select the most interesting cases in the hospital.

O. H. Crist, M.D., Danville: As a member of the Maternal and Child Welfare Committee of the State Society, I am glad to discuss any phase of a subject dealing with these principles. For the improvement of maternal and child care, the state committee has been exerting its efforts along three main lines. For more than three years we have been formulating and promoting ways and means for reducing maternal and child mortality and morbidity.

The lines of attack have been: *first*, to encourage doctors to give better services in such cases and to offer ways and means for their preparation; *second*, to educate the public in our state to ask for, to expect, and even to demand better service; *third*, to improve hospital facilities and service in such cases.

The methods used for improving the doctor's service were: *first*, by refresher courses which have reached nearly every county in the state; *second*, by intensive summer courses at the University's teaching hospital; *third*, by hospital staff conferences; *fourth*, by a maternal welfare program sponsored by the various County Societies; and *fifth*, by creating in the doctor an obstetric and pediatric consciousness by the previous methods and by study and reporting of deaths in these lines.

The public has been more or less informed on the necessity of better care: *first*, and primarily, by a doctor's committee in most counties who have arranged for educational lectures to groups. This method has been wide spread; *second*, moving pictures and slides with or without lectures; *third*, by a maternal and child welfare county nurse, who carries the educational program to the smaller groups and individuals.

Since the more serious and complicated cases are usually taken to a hospital, then it becomes doubly important that the best of service be available in the institutions. With this in mind some two years ago, the state committee inaugurated a movement for better hospital service and care. A subcommittee was appointed to formulate what they considered the minimum requirements for hospitals, outside of Chicago, that were to care for maternity and infant cases. It was not intended that these requirements should put any deserving hospital out of existence or even work a hardship.

These suggested minimum requirements, simple as they were, comprised some twelve pages. The hospital was considered under three principal heads: the physical plant, the equipment and the personnel.

I cannot go into detail in this time allotted, so must speak in generalities.

If the nursery is to function to its greatest efficiency, it must have the best baby possible to serve. To obtain this best baby, the state committee feels, and have written in their suggested minimum requirements, that there should be certain restrictions in the delivery department. These are few and are designed only to correct certain gross malpractices that are not so infrequently found.

First—Out of town physicians should stay with their cases or designate someone in town to be called in case of emergency. This suggestion is necessary since some men expect to be called from their homes — a distance, in some cases, of thirty or forty miles — in time to give proper attention and proper delivery of their case.

Second—The extract of pituitary gland or any of its similar preparations should not be given in larger than two minin doses, until after the completion of the second stage of labor.

Third—Consultation should be called when major abnormalities are diagnosed, or major operative procedures are contemplated. This consultation should be called as soon as the abnormality is recognized.

Fourth—The consultant shall take a complete history, examine the patient thoroughly, and fill out the consultation record showing the necessity for such operative interference.

Fifth—Forcep operations shall not be attempted until after the cervix is completely dilated as determined by vaginal examination.

It would appear that none of these regulations would be necessary, but experience in out-lying, open staff hospitals and information from many localities tells us that they are necessary.

The first nursery service is in the delivery room. The facilities necessary for the first care of the new-born are simple. They include equipment for resuscitation, warm bath, tracheal cathcter, oxygen, and a heated bassinet.

Every baby should be marked for identification before leaving the delivery room.

Since a maternity hospital means any institution, other than a private home, where pregnant or parturient women are delivered and receive care, then the term "Nursery for the new-born" shall mean any separate room or rooms in such institution in which new-born babies receive care.

Physical plant—This nursery room or rooms shall have adequate sunlight, running water, and proper facilities for cleanliness, ventilation and sanitation. It shall have no connection with public bath, utility rooms, or laboratory. It must be closed from visitors of the hospital. The room temperature must be kept above 70°. Special provisions must be made for the care of premature infants. Provisions must be made for the isolation of infected cases — either actively or potentially infected.

Equipment—The equipment of the nursery should be limited to furnishings and supplies necessary for

the care of the infants only. This includes bassinets, examining table, the common instruments used in examination and treatment, and means for sterilization of the same. Oxygen equipment suitable for infant use shall be available. Suitable refrigeration facilities for milk mixtures shall be provided. There shall also be means for sterilization of all feeding utensils used in formula mixing.

For the premature there should be some type of heated bed provided. The temperature of the premature room shall be maintained at 75°. They must have means for protection against undue exposure to cold or heat.

Personnel—The nursery must be under the control of a graduate nurse. It is highly advisable that she shall have had special training in infant care. Any nurses working under her, and everyone coming in contact with the babies or with the nursery, must follow the accepted rules of asepsis and antisepsis. Nurses entering the nursery should have careful examinations before entering the service to make sure they carry no infections.

Doctors must wear sterile cap and gown and must wash and disinfect their hands before entering the nursery. An entirely separate nursing staff should care for the isolated cases.

General regulations—The apparatus such as the oxygen and the heating appliances shall be kept in perfect working order.

Visitors shall not come in contact with infants at any time.

Any baby delivered of an infected mother, and any baby delivered outside the hospital or readmitted, shall be considered infectious and shall be isolated on admission.

Complemental or supplemental feedings, when used, shall be prescribed individually by the physician in attendance and not from a stock mixture.

Nurses or doctors with any suspicion of infections or exposure to infections should be excluded from the nursery or delivery department. I believe that along this line, stress should be pointed toward the doctor. I fear that at times he does not use discretion in caring for various kinds of infectious cases and then goes directly to the maternity, the delivery room, or the nursery.

Practically all rural hospitals have open staffs. Any and every graduate in medicine, with a good reputation and ordinary skill, is permitted to work in most of these hospitals. He can, and does practice, both in the maternity and in the nursery. Since this practice is with his private patients, he treats both mother and child during their hospital stay. It is neither practical or profitable to call a pediatrician for this nursery service. Township or county orders are cared for as private cases by these general practitioners.

In my opinion there should be rules requiring consultation as soon as any serious abnormality is discovered. This consultation should be with the best informed doctor on pediatrics that is available.

These open staff hospitals cannot be conducted like

a closed staff or like a teaching institution. However, as the younger and better trained physicians gradually replace, in some cases, a more careless class, the type of nursery, as well as maternal care, will inevitably be improved.

Milton E. Bitter, M.D., Quincy: As a member of the State Maternal Welfare Committee it becomes my duty to make suggestions and set forth certain ideas for the betterment of both mothers and babies throughout our state, as well as the nation. We, as the State Maternal Welfare Committee, have certain ideals toward which we are striving in order to lower the maternal and infant mortality as well as morbidity, and I have been asked to discuss one of these factors, namely, the importance attached to the delivery room.

In considering the problem of the delivery room many important factors must be taken into consideration. In the first place I believe we are all cognizant of the fact that infection still represents the greatest menace to the child-bearing woman. I believe that this potential danger exists both in the home and in the hospital, but when it does exist in the hospital it is due to lack of proper facilities and isolation, or faulty technique. This is particularly true in the smaller general hospital doing some O.B. work, for here they must also admit within their portals all the sick and diseased of their entire community.

The actual time of delivery represents the most likely period during which infection may be introduced into the reproductive tract, so that unusual precautions must be taken to provide the parturient woman with all possible safeguards.

Because of this fact, and the fact that conditions under which confinements are conducted are often more difficult for everybody concerned, including the patient, not to mention the fact that in O.B. practice each patient is really two patients, there is no doubt in my mind that the maternity division should be the equal of, or even better than, the surgical division.

Further, I believe that infected patients, from whatever source — medical, surgical or gynecological, ophthalmologic or otologic — carry intimate and remote dangers to the parturient woman, and that the strictest isolation must be established and maintained.

As to the planning of a delivery room, I believe that three things are very essential. 1. Location; 2. Equipment; and, 3. Personnel.

Considering location — this should be an isolated or separate department from the hospital and be located as far as possible from likely sources of infection, such as the pediatric department, laboratories and rooms devoted to infected surgical or medical cases. Further, the delivery room should be located close to the hospital rooms devoted to maternity cases. It should have good exposure, sufficient daylight and ventilation. It should be large enough to provide adequate space for several attendants who conduct labors, as well as adequate space for equipment. The equipment should be ample for the needs

of the O.B. patient. According to the Maternity Hospital Law and requirements for licensure for maternity hospitals, divisions, general hospital and maternity home, the minimum equipment shall be provided and in addition all hospitals shall provide the following:

1. A standard sterile uterine pack in the delivery room at all times.
2. Facilities for infusion and blood transfusion in the delivery room.
3. An instrument for determining blood pressure.
4. Carniotomy instruments.
5. At least one O.B. forceps.
6. A heated bed for the new-born infant.

Medical supplies: Ergot, alcohol, pituitrin, soap, disinfectant, stimulant and anesthetic approved by the attending doctor.

Silver nitrate 1% — preferably that put up by the Department of Public Health Laboratory:

Other items of importance would include incubators, tracheal catheters, identification beads, and adequate supplies of sterile linens, basins, needles, syringes, etc.

As to personnel, the licensee is the person responsible for the conduct of the hospital. This person must be of good moral character, free from infection and physically clean. If the licensee is not a registered graduate nurse, a registered graduate nurse must be on duty at all times when patients are present in the hospital.

All deliveries shall be attended by a licensed physician.

All personnel, nursing or otherwise, shall present a recent certificate issued by a registered doctor, showing good health, including freedom for infectious lues or gonorrhea, and I think it should be added, tuberculosis.

All personnel with evidence of acute respiratory disease shall be excluded from the maternity division.

H. L. Penning, M.D., Springfield: I think you have seen from the discussion that has been given by Dr. Bitter and Dr. Crist the background that was laid so well for us by the Maternal Welfare Committee as an introduction to the present requirements that have recently been introduced for maternity hospitals by the State Health Department.

As the doctors have told you the requirements are simple. They are what the majority believe to be safe and they are being administered with what we feel is a grain of common sense, and of course a certain degree of interpretation becomes necessary in each individual case. We have not, as yet, incorporated definite staff rules of procedure and we do not contemplate that type of venture at this time.

We sincerely hope that the movement which has been begun by the American College of Surgeons, so ably described by Dr. Cooley, of staff organization and staff rules of procedure built up and administered by doctors, will be more widespread and will be used by hospitals through the state. We feel

that the rules of procedure are something that belong to the jurisdiction of the doctors and common opinion on this will, in time, produce the desired results.

Charles C. Rentfro, M.D., Chicago: This is a very interesting meeting and I am glad to see Dr. Cornell here this afternoon, because Dr. Cornell was the first chairman of this section and he was also the man who took the brunt of the battle in Chicago to establish the Maternal Welfare Committee. He probably received many kicks and much condemnation in the State of Illinois on the Maternal Welfare Committee. Having been on that committee with him, we were well convinced of the need of more and better care for the maternal and the infant patient.

Staff organizations has always been an interesting thing to me, because being on the staff of a hospital which is an organization, our problem is the same as your problem. Somebody has to take the responsibility for any organization, and all institutions should have a number of men whose duty it is to look after the maternal patient and the infant. They must take into consideration that they are given a duty not only to the staff but to the patient. They must take the responsibility and then must administer the responsibility. I believe it is important that the staff of a hospital have a definite number of men whose job it is to look after each department. The staff should hold them to it and these men should do their work. The woman who comes to us is entitled to the best we can give her, and I believe it would be well within the authority of the Department of Health of the State of Illinois to ask each hospital within its realms to tell, as director of health, what they propose to do for the care of the sick in their community. That means they have to organize and determine what they are going to do, and then make plans and require of the men who come there to live up to certain regulations. They have a definite duty to the woman who comes there to be delivered.

Another point is this prenatal care. In prenatal care in the association of hospitals it is pretty hard to get any early record. I think that by having a plan whereby you have the patient come to the hospital as early as you could and have the patient pay five or ten dollars and give them a receipt for payment on their hospital bill when they come to be delivered, in this way you have on record at least a preliminary examination of that patient before they go into the hospital to be delivered. It will also help you and the intern to evaluate what you are up against when he gets a patient he has never seen before. The maternal hospital must be brought under control and I believe the only way to do it is to set aside certain men to do that work.

One more point is the importance of the responsibility of the men who take charge of the obstetrics in the hospital to the younger men. If we expect to have better obstetrics in the hospitals we must do something for the younger men. In the ordinary staff meetings a young man sometimes has a chance

to read a paper on obstetrics, but if he gets one chance in a year he would be doing well. If we required these younger men to write papers on some definite obstetrical subject in which they were interested and ask them to read the papers not only once, or twice, but often during the staff year we would find that in a little while the community hospital would have more men to go along and carry the burden of fetal and maternal welfare and the burden of morbidity and mortality.

THE CONTROL OF TUBERCULOSIS

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Introduction: Tuberculosis has been, for many centuries, one of the most serious chronic diseases afflicting mankind. According to Long¹, prior to 1800 phthisis was carrying off one-fifth of the population. Since 1800 there has been a steady and striking decrease in the incidence of and mortality from tuberculosis. For example, death rates were about 300 per 100,000 population before 1900, whereas today in many states and provinces they are well below 50 per 100,000 population. Nevertheless, tuberculosis was the only communicable disease except pneumonia to rank among the first 12 causes of death in Illinois in 1938². It is seventh among all causes, and exclusive of pneumonia, tuberculosis causes twice as many reported deaths as all other communicable diseases combined.

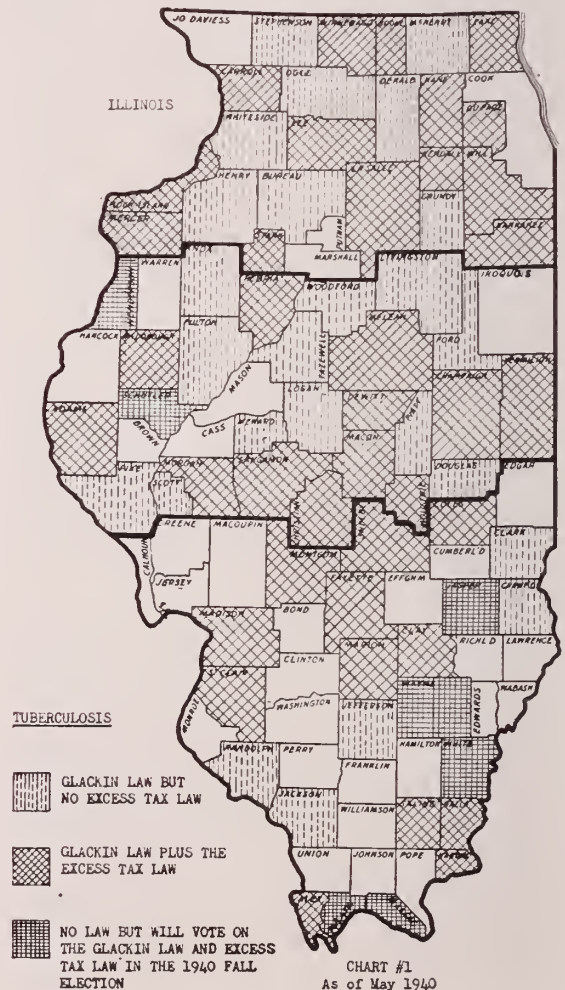
The social significance of tuberculosis far outweighs its importance as a cause of death. Its incidence is greatest in the 15-45 age group, and those are the years when the burden and responsibility of establishing homes is greatest. Few families are fortunate enough to be able to weather the cost of months or years of treatment, and when the family wage earner becomes tuberculous, the seriousness of the situation is multiplied many fold. Thacker³ states that the Committee on Waste in Industry of the Federated Engineering Society estimates the annual cost from the ravages of tuberculosis in this country to be about \$500,000,000. Thus, there is some justification for the title "Public Enemy Number 1," which Smith⁴ has given to tuberculosis.

The decline in tuberculosis rates has been effected by at least two major influences. The

first of these made itself felt about 1800 and coincided with improved environmental conditions which accompanied world-wide industrial changes. There is no conclusive proof, however, that the relationship is other than chronological.

In any event, tuberculosis death rates have been continually decreasing throughout most of the world during the past 150 years whether or not specific control measures have been used, and we should not close our eyes to this potent but unexplained factor.

The second major influence in Illinois, which began about 1900, consists of voluntary organized war on tuberculosis. Outstanding landmarks⁵ have been the organization of the Illinois Tuberculosis Association in 1904, the institution of Christmas Seal Sales in 1908, the materialization of Sanatorium programs beginning in 1906, the passage of the first Glackin Law for municipalities in 1908, and for counties in 1915, the elimination of tuberculosis in



*Given before the Section on Public Health and Hygiene at the Annual Meeting of the Illinois State Medical Society, Peoria, May 22, 1940.

cattle, the free distribution of Educational literature by the State Department of Public Health, and the institution of free examinations of sputum in 1929. Recently, we have begun to realize that rehabilitation is a vital factor in control.

There is no accepted specific preventive measure to aid in tuberculosis control. Man enjoys no effective natural immunity. We cannot satisfactorily immunize, either passively or actively. All too often it is even impossible to permanently arrest cases. Fortunately, there is no serious "carrier" problem. Therefore, the only successful control measures today center around the diagnosis, the treatment and segregation of cases.

Proper control requires, 1. early treatment of all or nearly all cases; 2. adequate treatment, and 3. prolonged follow-up, including suitable rehabilitation. Early treatment of all cases demands good reporting, intensive case detection programs, and sufficient facilities for treatment.

We note from Table I, that in the five-year period, 1934-38 inclusive, the average cases re-

ported yearly is 9,087 and the reported deaths 3,986. The case/death ratio is a little less than 2.3 to 1.

REPORTED CASES AND DEATHS IN ILLINOIS

YEAR	CASES	DEATHS	CASE:DEATH RATIO
1938	8222	3686	2.23/1
1937	9064	3995	2.27/1
1936	8506	4050	2.10/1
1935	9911	4075	2.43/1
1934	9734	4125	2.36/1
1934-1938 Average Yearly	9087	3986	2.28/1

TABLE 1. Cases and death reported in Illinois 1934-1938, Illinois State Department of Public Health Annual Reports.

Reporting is generally considered good if the ratio is 3:1. It should be noted that the figure 2.3:1 includes a great number of cases which were reported solely because they died. When a tuberculosis death certificate or a positive tuberculosis laboratory report is received, the Department checks it against the morbidity report and if there has been no report, the physician and local health officer receive a letter requesting a morbidity report. If no report is received from them the case is tabulated on our morbidity report from the death certificate by the Central Office. If this were not done, our ratio would probably be considerable below 2:1. Thus, the Illinois Department of Public Health morbidity report for tuberculosis represents practically all tuberculosis that comes to the department's notice, because it includes:

- (1) Cases reported by the physician before the patient's death.
 - a. voluntarily
 - b. as a result of follow-up of positive laboratory report by the Department
- (2) Cases reported as cases because they died of tuberculosis.
 - a. reported by physician at time of death
 - b. reported by physician after request by the department
 - c. reported by the Department because of death certificate

The next slide illustrates the average yearly reporting by groups of counties of cases and deaths for the five-year period 1934-1938, inclusive. The state is divided, exclusive of Chicago, into the North, Central, and Southern tiers, with population approximately equal.

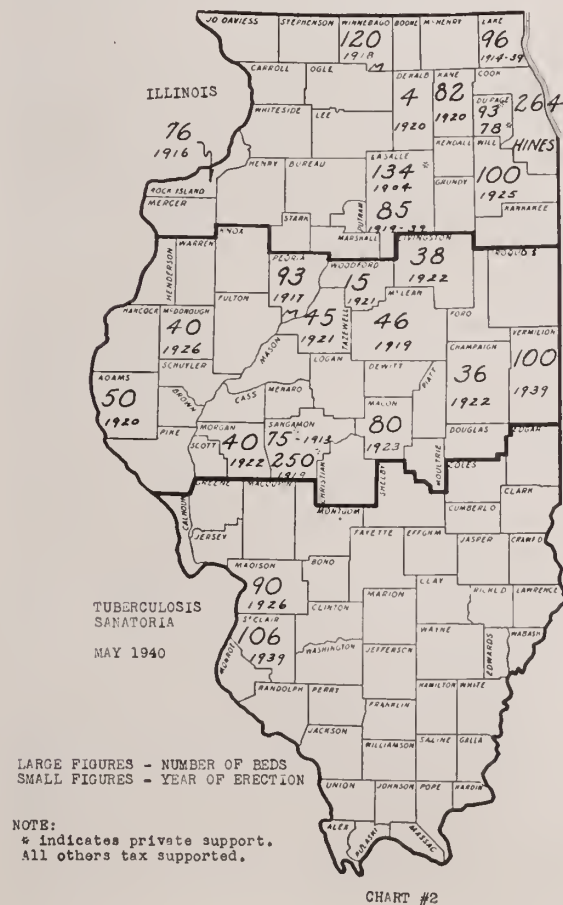


TABLE 2

	POPULATION 1930	COUNTIES	CASES DEATHS	CASE- DEATH RATIO
NORTH	1,212,809	25	1103/530	2.08/1
CENTRAL	1,216,959	32	1099/446	2.46/1
SOUTH	1,218,763	44	1039/568	1.83/1
COOK CO.	3,982,123	1	5846/2445	2.39/1

TABLE 2. The Average Yearly Case Death figures for the period 1934-1938 inclusive, by tiers in the State.

On the basis of 5-9 cases per reported death per year, it is estimated that Illinois has 20,000 to 35,000 cases.

It is apparent that tuberculosis is widespread throughout the State; in fact, there were only 5.8% more cases reported from the Northern than from the Southern tier, and, of course, reporting has been shown above to be less complete in the South. One should compare the case death ratios. Also note that the death rate per 100,000 population is highest in the Southern tier. One can conservatively contend that future control should stress better reporting throughout the State, particularly in the Southern tier.

Many states have state appropriations for the care of tuberculosis patients, but the State of Illinois never has had such appropriations. The burden of care must fall on the patient, or his relatives, or on some voluntary agency, or on his local unit of government. Too often there is little or no care, even for far advanced sputum positive cases.

It was early realized that public funds would be needed for the care of most cases. Therefore, in 1908, the State Legislature passed the Glackin Law authorizing municipalities to construct and maintain free public tuberculosis sanatoriums. Four cities took advantage of this law, and in fact, municipal sanitariums still continue to function in Chicago, Rockford and Peoria. In 1915 another Glackin Law was passed by the General Assembly which permitted counties by popular vote to levy a tax, the returns from which could be used only for anti-tuberculosis work. The law permits a county either to erect a sanatorium for its citizens or to pay for their care in another suitable sanatorium. The law, although amended from time to time continues to furnish taxing power to the counties for the treatment of tuberculosis. Chart No. 1, is a map showing the 38 counties which have voted the Glackin Law with the excess tax provision. All but two⁶ of these coun-

ties are doing an excellent job of caring for their citizens ill with tuberculosis. All these counties have voted the excess tax since 1930.

The Glackin Law is also in effect in 25 counties but the tax is not a special tax which can be collected in excess of the statutory tax limit of 25c. Of these counties 12 are giving care to their cases, 5 are giving poor care, and 8 are giving practically no care⁶.

In addition, there are 7⁷ counties which will vote, most of them favorably, on the Glackin Law and excess tax law this coming fall. Two others already have the Glackin law but will vote on the excess tax provision.

It is evident that the Southern tier is below the rest of the state in the percentage of counties operating under the Glackin Law. Counties without the Glackin Law usually do not have sufficient revenue to treat cases.

As a result of the Glackin Law some counties have established sanatoriums for the care of their citizens — Chart No. 2 depicts the sanatorium situation in the State⁸. It reveals that in the Northern tier, exclusive of Cook County, there are 7 counties which have a total of 599 free beds for the use of residents of their counties only. In addition, La Salle county has 134 beds available to anyone at \$18.00 to \$25.00 per week. DuPage county has 2 private sanatoria with 717 beds (78 & 93) making 305 more in the tier. On the bases of 2 beds per reported death per year, there should be 1060 beds in that region instead of 904. There are 17 counties in that tier with no facilities.

In the Central tier 11 counties and 1 City provides 583 free beds for county and city residents only, some of which if not filled may be used by tuberculosis cases from other counties at rates ranging from \$12.00 to \$25.00 per week.

In Sangamon County 2 private institutions provides 325 beds on a pay basis to patients from any county. Thus 12 counties (13 sanatoriums) furnish 908 beds. Multiplying the deaths (446) by 2 indicates 892 beds would be sufficient.

The picture is different in the Southern tier — there we find only 196-free sanatorium beds, no private facilities and 54 beds in an isolation unit in Alexander County. The Southern tier has 568 deaths on the average each year. Multiplied by 2 that means 1136 should be available. 41 counties have no facilities.

It is thus seen that, exclusive of Cook County, 2272 sanatorium beds are available for tuberculosis patients, but that on the basis of reported deaths, 3088 are needed. It is further apparent that the greatest need is in the Southern tier. (The 2272 includes 264 beds in Hines, not included in any one tier, free to veterans)

Most sanatoria, exclusive of Cook County, were erected between the years 1916-1926. From 1926-1939, no new beds were added. 1939-1940 saw 63 more in Lake County, 35 more in La Salle, 106 in St. Clair and 100 in Vermilion County.

It seems reasonable to conclude that 25 years operation under the Glackin Act produced about 75% of the number of beds needed. It should also be noted that in the past 14 years, since 1926, only 4 new sanatoria have been developed, all in 1939-1940. (In 1939 Lake County discontinued 23 beds in the County Hospital and built a 96 bed sanatoria; La Salle County discontinued an inefficient cottage plan of 35 beds and built a new 85 bed sanatoria in 1939.) There is an explanation for this situation.

In 1927, the Courts declared that taxes could not be collected under the Glackin law if they were in excess of the statutory limit of 25c. An additional excess tax law was therefore passed in 1929 and 38 counties since 1930 have passed the excess tax feature. Nevertheless, the 1927 court decision slowed up the tuberculosis program in Illinois for several years. Perhaps this apparent lack of progress was the reason that the Legislature in 1939 passed a new law entitled, "An Act in Relation to the Establishment and Maintenance of Tuberculosis Sanitarium Districts." Its objective seems to be to increase the number of free beds for the treatment of tuberculosis and to make those beds available to residents of counties which are too small or too poor to erect institutions of their own. The bill has met with some criticism from various responsible organizations, and as far as can be learned has not been incorporated into the tuberculosis programs of any counties to date. Regardless of disadvantages which may be present in the bill itself, it does signify legislative interest in tuberculosis. This type of legislative interest usually reflects public demand.

More beds are needed and these beds can be made available only by direct tax support or

by private agencies. Private agencies will not supply sanatoria unless they are assured of payment for services rendered. Assurance can be obtained in only one way and that is by the use of governmental revenue. It has not been stressed here, but it is a fact that the highest death rates, and the least adequate facilities for treatment are found in those parts of the state which have the lowest per capita taxable wealth.

The need for state appropriations has long been recognized. I quote from the *Illinois Health Quarterly*, Volume 1, No. 1, January-March, 1929 — "Appreciable progress in the future against tuberculosis in man will depend in large measure upon a generous appropriation from the state for that purpose. A half million dollars per year, properly apportioned, would be sufficient to inaugurate a program in keeping with the magnitude of the problem, and the dignity of the State. Spending a million dollars a year for combatting tuberculosis among cattle and \$6,000 per year for combatting tuberculosis among humans appears to be somewhat of harmony with the customary evaluation of bovine and human life."

At this time, however, it seems probable that the Glackin Law can be put into effect in practically all counties in the State and that the funds thus raised will be adequate to maintain sanatoriums for the treatment of all cases. It has been suggested⁹ that funds be obtained from the State or Federal Government for the erection of two sanatoriums of 250 or 300 beds each, which should be located in the Southern tier. If the counties pass the Glackin Law, they will be able to maintain the institutions. This seems to be a sound plan, and one which will not work a hardship on those counties which have already passed the Law and erected their own institutions.

In view of the fact that we have been using deaths in the 5 year period 1934-1938 as a basis for discussion, but that as a matter of fact the rates have been decreasing each year, it is probable that there is no need to push the erection of institutions in the Northern and Central tiers. If all counties will vote the excess tax law, it is to be expected that more institutions in the Northern two thirds of the state will become available, if they are needed.

Before leaving the Glackin Law, I should like to voice a word of caution. There are many legal pitfalls to trap counties in their efforts to vote the law, and in every case no definite step should be taken until competent advice has been received. This advice and many helpful sugges-

tions will be gladly furnished without charge to any responsible groups of interested people by the Illinois Tuberculosis Association or the State Department of Public Health.

Time will not permit much discussion of the activities and jurisdictions of the only two organizations actively interested in tuberculosis control in Illinois. One is the Illinois Tuberculosis Association, which is an unofficial organization, and the other is the Illinois State Department of Public Health which is the official agency. However, it should be emphasized that there is probably no closer cooperation between any two organizations than that which exists between the Illinois Department of Public Health and the Illinois Tuberculosis Association. The Association's work is primarily educational and promotional, but as far as possible it also extends aid in the actual discovery and control of cases. The department is also active in the educational field, and is gradually extending its case finding and control work.

When sufficient funds and treatment facilities become available, the problem of control becomes primarily a matter of early case detection and life-long follow-up of all cases. In the meantime those activities should not be neglected.

SUMMARY

1. Although tuberculosis incidence and death rates are declining tuberculosis remains perhaps the most significant and serious communicable disease in Illinois today.

2. We should remember that there is an unexplained factor operating to decrease tuberculosis rates.

3. Reporting should be improved, particularly in the Southern tier.

4. Sanatorium facilities should be provided by State or Federal funds for the Southern tier.

5. The Glackin Law should be passed in all counties in the State. This is the most important control measure to stress at this time. Advice should first be obtained from the State Department of Public Health or the Illinois Tuberculosis Association.

6. When the above objectives have been attained, the problem of control is simplified, but educational activities, early case detection, early case treatment, and rehabilitation should not be allowed to stagnate during the interim.

THIS PRESENTS VARIOUS ITEMS RELATIVE TO TUBERCULOSIS SANATORIA AND LAWS IN ILLINOIS AS OF MAY 1940.

THE DEATHS ARE THE AVERAGE YEARLY REPORTED 1934-1938.

1. Geographical Area	North	Central	South	Total
	(b)			
2. Number Counties	25	32	44	101
3. Sanatoria and Beds maintained by counties	6-479	10-490	2-196	18-1165
4. Sanatoria and Beds maintained by Cities	1-120	1-193	-	2-213
5. Total Cities and municipal beds	599	583	196	1378* 264
				1642
6. Sanatoria and Beds privately owned	3-305	2-325	-	5-630
7. Total of all beds	904	908	196	2008* 264
				2272
8. Average reported deaths Illinois 1934-38	530	446	568	1544
9. Estimated beds needed if two per death	1060	892	1136	3088
10. Estimated beds deficient	-156	+16	-940	-1080* 264
				816
11. Counties with no Glackin Law	3	8	27	38
12. Counties with Glackin Law in excess tax	8	12	5	25
13. Counties with Glackin Law and in excess tax	14	12	12	38
14. Counties now planning to vote Glackin Law and excess tax in the fall	0	3(a)	6(a)	9
(*Plus Hines Veteran Hosp. 264)				
(a) Has Glackin Law already in force, but not the excess tax				
(b) Exclusive of Cook County (see accompanying maps for Counties in each tier).				

REFERENCES

- Long, Esmoud R. The Clinic, the Laboratory and the Field. Nat'l Tbc. Assn. Trans. 33: 18-23 1937.
- Ill. Annual Reports.
- Thacker, E. A. Tbc. Control in Educational Institutions by the Tbcclin-X-ray Method. Ill. Med. J. 71:354-361, April, 1937.
- Smith, L. E. The Human Factor in the Control of Tbc. J. Lancet 57: 92-93. July, 1938.
- Illinois Health Quarterly. Vol. 1, 1929.
- Records of Ill. Tbc. Assn.
- Information from Ill. Tbc. Assn.
- Am. Sanitarium Directory.
- Resolution of the Ill. Tbc. Assn.

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No. 9 (Chart No. 3)

This presents various items relative to tuberculosis sanatoria and laws in Illinois as of May — 1940. The deaths are the average yearly reported 1934-1938.

Dr. Hullerman has presented in a very clear and concise manner the tuberculosis problem which exists in Illinois, with special emphasis on the tuberculosis sanatorium problem. The analyses made regarding the recording of cases of tuberculosis in the three sections of the state, namely, northern, central and southern, and the analyses relative to sanatorium beds available in these three sections of the state point clearly to the problem which exists and to the necessity for increasing anti-tuberculosis activities in the southern third of Illinois. Dr. Hullerman very wisely confined his paper to a presentation of facts which have definite bearing on the fundamentals. His conclusions are sound and should be accurately remembered and applied by all groups interested in promoting activities leading toward the eventual control of tuberculosis.

In addition to giving complete approval to the facts presented, and in addition to reemphasizing the importance of the conclusions correctly deduced from the facts, it is possible to enlarge in this brief discussion on one or two of the points made by Dr. Hullerman.

In 1939 the General Assembly approved "An Act in Relation to the Establishment and Maintenance of Tuberculosis Sanatorium Districts." Dr. Hullerman referred to this Act and stated that it has met with some criticism from various responsible organizations. A few words should be said as to the reasons for certain organizations not giving approval to this Act. In the first place, this Act should not be confused with the District Sanatorium Act under which Peoria County operates outside the city of Peoria. The Act to which Dr. Hullerman referred was promoted by a group of people in Southern Illinois who are ap-

parently sincerely interested in working out a solution to the Southern Illinois problem. However, the Act contains certain weaknesses which, until corrected, cannot be overlooked by the established organizations in Illinois which have for many years been working toward practical and efficient tuberculosis control measures.

1. It provides for a tax of five mills on each dollar of the assessed valuation of the property in any district comprised of any number of counties. It is believed that if this Act should be passed and brought before the Supreme Court, the Court would rule that a five mill tax on each dollar is an exorbitant tax, especially in view of the fact that all of the counties of Illinois that have built and are maintaining their own sanatoriums have done it on a tax which has not exceeded one and one-half mills on each dollar which is the top limit permitted by the Glackin Law.

2. The Act provides for the election of seven trustees for such a district sanatorium at a regular election. This feature tends to place the management of such a sanatorium directly into politics, and it is significant that the law does not state that there shall be medical representation on the Board of Trustees of such a sanatorium. In the light of present-day medical knowledge relative to the treatment of tuberculosis, this seems to be a serious omission.

3. The law does not provide for geographical representation on this Board of Trustees. The Board of Trustees, elected by the voters in the district, may all come from one county.

4. This Board of Trustees after elected becomes a separate taxing body. It takes the control of taxation out of the hands of the individual counties in the district, and this Board of Trustees are all powerful with regards the levying of such tax as they might feel that they need. This implies that a tax of five mills on each dollar will be assessed on all counties in the district without regard to their tuberculosis problem, or the number of patients the county may have in the sanatorium.

5. The law further provides that the Board of Trustees makes all ordinances relative to the management of such sanatorium, and one of the ordinances which they may make is to pay themselves a salary, plus expenses, of \$2500 a year each. This would represent an expenditure of \$17,500 a year, or enough to take care of 20 patients each year. At the present time there are in Illinois 186 sanatorium board members working in their counties in accordance with the provisions of the Glackin Law. None of them have ever received any compensation directly or indirectly for the work which they have done.

6. There appears to be no provision in the Act for the discontinuance of the tax or for the discontinuance of the district, or for any county having entered the district to withdraw from it.

The foregoing reasons are the primary ones which

have caused the Illinois Tuberculosis Association to withhold approval of the Act, and which have caused many of the County Medical Societies in 27 Southern Illinois counties to voice disapproval of this act. The original district planned by those interested in this law comprised 27 counties. Such a plan seemed to include too large an area for one sanatorium, and not enough signatures were procured on petitions to have a referendum vote April 9, 1940.

The General Assembly showed considerably more interest in the tuberculosis problem than indicated by the approval of the District Sanatorium Act. For example, the original title of the Glackin Law, approved June 28, 1915, was "An Act Relating to County Tuberculosis Sanitaria." On March 17, 1939, that title was changed and is now more accurate in that it reads "An Act Relating to the Care and Treatment by Counties of Persons Afflicted with Tuberculosis and Providing the Means Therefor." In March, 1939, likewise, the Glackin Law was further amended to improve its provisions relative to the forming of sanatorium districts under the provisions of the Glackin Law itself. There is considerable room for improvement and further amendments may be necessary to bring about district institutions under the provisions of the Glackin Law with a tax not to exceed a mill and a half on each dollar of the assessed valuation and with each county properly represented on the trustees of any such institution which might be built.

In July, 1938, provision was made by the General Assembly for the issuance of bonds by counties that have passed the Glackin Law and desire to procure money immediately to build a sanatorium. Lake, Vermilion, La Salle, and St. Clair counties took advantage of this amendment. The fact that it was not possible to issue bonds prior to 1938 for building purposes might have had something to do with the fact that no sanatoriums were built for a period of years.

In May, 1939, the General Assembly passed another amendment to the Glackin Law validating elections in relation to county tuberculosis sanatoriums providing those elections were in accordance with the provisions of the law. They also passed amendments validating certain tax levies which have been made.

In 1939, they further amended the Glackin Law so that taxes raised, if properly voted, are not included in any limitations for taxes fixed by law or which may later be fixed by law.

It is hardly possible to place enough emphasis on the fact that there are many pitfalls of a legal nature which face any county planning to vote and bring into effect the Glackin Law. Therefore, as Dr. Hullerman said, any county considering this matter should ask for help either from the Illinois Tuberculosis Association or the Illinois State Department of Public Health. A postal card addressed to the Illinois Tuberculosis Association requesting a copy of the Glackin Law with all of its provisions and amendments will receive a prompt reply. Petition forms, suggested resolutions and suggested ballot forms will be sent on request to any county. In conclusion,

from the facts presented by Dr. Hullerman, the following points should be emphasized:

1. In the northern and central thirds of Illinois (excluding Cook County) the problem of providing additional sanatorium beds is not as important as the problem of securing earlier diagnoses of cases of tuberculosis.

2. In the southern third of Illinois efforts to procure adequate tuberculosis sanatorium facilities must be pushed as hard as efforts to procure the earlier diagnosis of cases.

3. It appears that all counties should pass the Glackin Law and levy a tax not to exceed one and one-half mills on each dollar and administer that tax fund in accordance with the provisions of the law under properly appointed boards of trustees having on them medical representation.

4. Efforts should be made to procure federal or state aid for building, not including the maintenance of several moderate sized tuberculosis sanatoriums properly situated in the southern part of the state; these institutions to be maintained by the counties using the facilities of such sanatoriums with funds collected in accordance with the Glackin Law.

S. M. Miller, M. D., Peoria: There are many sanatoria that are well administered and there are others in which the administration is not good and in which patients do not receive adequate treatment. While the Glackin's Act provides for the erection and maintenance of sanatoria and the care of tuberculous individuals, its essential purpose is the control of tuberculosis. In some communities, commissions operating under the Glackin's Act carry effective control programs. In others the control programs are ineffective.

Under the provisions of the Glackin's Act, Boards of Control are local self-governing bodies. A further amendment to the Glackin's Act is to be considered; an amendment giving to the Illinois Department of Public Health direction and supervision of local tuberculosis programs as administered under the provisions of the Act, thus coordinating the tuberculosis program of the Illinois Department of Public Health with local programs.

CARDIOVASCULAR AND SYSTEMIC MORBIDITY FOLLOWING HYPERPYREXIA IN CENTRAL NERVOUS SYSTEM SYPHILIS

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The treatment of central nervous system syphilis generally includes some form of hyperpyrexia

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followed by or in conjunction with heavy metals and arsenicals. In spite of the fact that various forms of hyperpyrexia have been in use, artificial malaria, as originally introduced and recently re-evaluated by Wagner VonJauregg¹, continues to be regarded by most authors as the method of choice.

At the Elgin State Hospital malaria and typhoid vaccine fever treatment are at present being used in the treatment of general paresis. Patients who are in good physical condition and who do not present any evidence of cardiovascular involvement are treated with malaria, while all colored patients and those debilitated physically are treated with typhoid vaccine.

Though we were not primarily concerned in this paper with the end results, as far as mental improvement is concerned, malaria did not seem to be definitely superior to typhoid vaccine in this respect. However, final evaluation can be made only after more time has elapsed, since many authors have indicated that typhoid remissions were not as long-lasting as malaria, and relapses more frequent.

The reason for introducing other forms of fever therapy than malaria was the fact that malaria is drastic and has a marked debilitating effect on the patient. According to Neymann², the death rate, unless a critical selection of patients is made, varies between 10% and 30%. Most authors, especially Kessler³ and Wile⁴, agree that the danger of malaria therapy is the severe myocardial damage that occurs.

This study was undertaken to evaluate the general systemic and cardiovascular changes consequent upon the use of malaria and typhoid fever therapy, and if possible to set up objective criteria for a more rigid selection of patients to be so treated.

Methods and Materials: Of a total of 173 patients treated within the past 12 months, (of whom 115 were with psychosis), 65 were treated with malaria; 50 with typhoid fever; 39 with both malaria and typhoid, and 19 cases were treated with a modified technique of typhoid fever vaccine therapy.

Chemotherapy was administered in all cases concurrently with fever therapy, and consisted of heavy metals and tryparsamide unless contraindicated. Typhoid vaccine fever therapy was administered according to the Nelson divided dose technique used here for four years. The in-

travenous dosage varied from an initial one of 10×10^6 organisms to 1000×10^6 organisms, (and repeated two hours later), an average maximum dose being $300-400 \times 10^6$, which affects an average of 1-2 fever hours over 103° F. per paroxysm. More recently the authors have adopted a triple dose technique wherein the number of fever hours is equivalent to an average of three per paroxysm, obtained by administering a third dose two hours after the second one. In this manner, whereas 10-20 hours of fever was obtained throughout a course of 8-10 paroxysms, with this modification a total of 30-40 hours can be achieved.

A tertian strain of malaria, used here constantly for six years, patient-to-patient transmission, was utilized, the incubation period varying from twenty-four hours to ten days, the interval between paroxysms varying between 24 and 38 hours. The average duration of fever hours over 103° varied between 5 and 9 hours per paroxysm, taking into account that the initial paroxysm varied in duration from 6 to 36 hours of 103° and over the average therefore more properly evaluated as 4-7 hours per paroxysm.

Management: Absolute bed rest (as best could be maintained), maintenance of adequate fluid intake, nutritional standards adhered to, including high caloric, high vitamin diets plus high caloric interval feedings, fcosol and Blaud's pills, general tonics, and the use of insulin in 5-10 unit doses one-half hour before meals if necessary to improve appetite.

MEANS OF EVALUATION:

A. Clinical. All patients on admission were given complete physical examination, controlled by two physicians, special emphasis being directed to the cardiovascular apparatus. During the course of treatment, blood pressures were independently recorded in all of 173 patients at least twice daily; temperature, pulse and respiration were recorded every two hours during the afebrile period, hourly during the febrile period, and 15-30 minutes in temperatures over 105° . Daily blood pressures were taken for ten days after the completion of fever.

B. Laboratory. Complete blood counts and differential studies were performed before and after fever therapy in 45 cases. Three lead electrocardiograms were taken in 43 cases, varying from 2 to 18 in any one case and recorded before,

during the various phases of the temperature curve and after the treatment at various intervals up to nine months in many cases. Flat x-ray plates before and after therapy were taken at a two meter distance in 20 cases; this procedure was later discontinued in favor of fluoroscopy because of the former's unreliability in the diagnosis of early aortitis. Fluoroscopy with barium meal investigations in the various oblique views was performed in 84 cases and was considered indispensable in the diagnosis of early aortic involvement.

According to the fluoroscopic findings in 84 cases, patients were placed in three cardiovascular categories: Group A. Comprising 37 cases with no roentgenological evidence of cardiac involvement (44%); Group B those with uncomplicated aortitis, comprising 46% of the cases and Group C those with complicated aortitis (regurgitation or aneurysm), comprising 10% of the cases. The diagnosis of uncomplicated aortitis (Group B) was made when the following findings presented themselves, according to Kurtz⁵: sagging of the ascending aorta to the right with pulsation visible to the right of the sternum, increased density and tortuosity permitting visualization of the descending aorta. The diagnosis of aortitis in our series of cases could therefore be made fluoroscopically in a total of 55% of the cases. This compares favorably with Stokes⁶ 53% and Moore's⁷ 39%, while at autopsy Moore indicated that 70 to 90% presented a picture of syphilitic aortitis in varying degrees. The diagnosis of aortitis is therefore chiefly a fluoroscopic one. The clinical findings like abnormally loud A₂ or Tambour sound, systolic murmur over aorta, systolic roughening over aorta, systolic murmur at apex, rough mitral first sound and wide base on percussion were only found in 31% of our cases in Group B. Only six patients in all those studied presented cardiovascular subjective complaints, two of whom were in Group C, four in Group B. These cases obviously cannot be adequate representative because of the element of psychosis.

RESULTS:

1. *General Systemic Changes:* (A) Malaria — During the course of treatment and up to three weeks following the interruption of malaria, the patients displayed a loss of from five to

twenty pounds in weight, profound asthenia, occasional jaundice, increased susceptibility to various forms of infections, urinary retentions and fecal impactions, and a markedly prolonged convalescence.

Blood studies indicated a decrease of hemoglobin to levels as low as 45-50%, with corresponding anemia. The bone marrow was so severely depressed that the white count did not respond to infections; for example, in one patient who developed a widespread bronchopneumonia, only repeated injections of reticulogen was effectual in producing a satisfactory leukocytosis with ultimate recovery.

(B) Typhoid. During the course of typhoid vaccine fever treatment and thereafter, the patients gained weight; while jaundice, asthenia, and susceptibility to respiratory and other infections were conspicuously absent. Urinary retention developed in five patients and was satisfactorily relieved by simple catheterization.

Blood studies indicated either no change in the hemoglobin and C.B.C. in the majority of cases; or, in a few others, there was a slight depression of the hemoglobin, not exceeding 5-10% of the control. The R.B.C. and W.B.C. quite often indicated a slight rise. In all cases excess hyperpyrexia could be easily controlled by simple body-cooling procedures. Convulsions occurring during the paroxysm were more easily controlled than those occurring during malaria.

(C) Combined malaria and typhoid was used in those patients in whom either the malaria strain prematurely ceased to produce further paroxysms (in 32 out of 39 cases); or in patients in whom, because of the exacting effect, the malaria fever had to be interrupted (in the other seven cases). After a period of rest of from one to four weeks, the patient could be restarted on a course of typhoid vaccine. The morbidity and mortality in this group were chiefly those incidental to malaria.

(D) Modified form of typhoid vaccine fever therapy: The triple dose technique was introduced by us in order to increase the number of fever hours and to stimulate the response of the reticulo-endothelial apparatus. The systemic effect was similar to that of the Nelson method with the exception of a more marked decrease in blood pressure.

2. *Cardiovascular Changes:* (A) Malaria:

The general effect was for the blood pressure to drop at a rapid rate with the drop in temperature following a paroxysm, and to remain so for 48 hours, becoming progressively lower with every paroxysm, and resulting in a fixed hypotension that might endure for at least 1-3 weeks following completion of treatment. Systolic levels in the 60's and 70's were not uncommonly noted. Those in cardiovascular Group A. showed a drop of 24-36 points in B.P. following every paroxysm, while those in Group B. showed more profound and often perilous drops of 30-45 points on the average. The return to the control level, in contrast to that seen in typhoid, was very gradual and required weeks of convalescence. Only a few cases presented no change in the blood pressure. In eight patients who developed edema of the ankles, seven had been malaria treated and were in Group B., one in Group C. (treated with typhoid), the edema appearing in from two weeks to five months after completion of therapy.

Cardiac collapse requiring emergency treatment occurred in two cases of Group B; no cardiovascular mortality directly ascribable to malaria has yet occurred.

Electrocardiographic changes of the following nature were noticed: marked progressive lowering of R voltage with slurring and notching, extrasystoles, flattening of the T waves with later inversion, left axis deviation, S-T deviations, and presence of U waves. These became most conspicuous at the height of the fever, but in many cases also remained so in the interval period. In 28 of the 43 cases studied intensively by electrocardiograph, the myocardial changes (65% of the cases) continued to remain for from two weeks to as high as nine months; while 15 cases (or 35%) showed transitory changes, related to the fever, which disappeared within a few days to one week. Conspicuous was the increased damage noted in cases of Group B. as contrasted with cases of Group A. (It is obvious that no cases of Group C. were treated with malaria.) In contrast, Burnett⁸ showed definite changes in the E.K.G. of only 18% of his cases, but stated that the duration and significance of this had as yet not been determined.

B. Typhoid. The blood pressure drop was almost negligible in Group A., and ranged from 10-26 mm.Hg. in Group B, returning very

quickly to its normal level. Whenever there was a significant drop in blood pressure, one could suspect the existence of uncomplicated aortitis. Seven patients in Group C. showed drops from 10-52 points in systolic blood pressure, but there was also a quick return to normal. Edema occurred in only one case (Group C).

Electrocardiographic changes indicating myocardial damage occurred in 41% of the cases, but showed an improvement to normality within 8-12 weeks, the majority of these patients being in Group C, while transitory, insignificant changes occurred in the remaining cases. No instances of cardiac collapse occurred during the course of treatment.

C. Combined malaria and typhoid. The hypotension here was related to the effect of malaria and was not aggravated further by the typhoid. One case in Group A. had residual changes; 7 in Group B. had profound changes; while no changes were seen in three of Group A. and one in Group B.

D. Modified form of typhoid vaccine fever therapy: — In 18 cases treated with this modification, those of Group A. showed practically no change in blood pressure, while those of Group B. showed drops of pressure varying from 16-50 points, in keeping with a markedly increased number of fever hours.

No E.K.G. studies had as yet been made in this preliminary series.

3. *Morbidity and Mortality*: A. Malaria: Four patients died during or immediately following treatment: two of them during convulsions, one from severe intestinal hemorrhage and one from a facial cellulitis. Six patients died from five weeks up to six months after discontinuation of treatment; inanition, bronchopneumonia and convulsive state were the causes listed. Many patients were susceptible to upper respiratory, urinary and skin infections, and in three cases intestinal hemorrhages were observed. The total mortality during malaria fever in 65 cases was 6%, amongst which not a single instance of myocardial death was noted.

B. Typhoid. Death occurred in three cases, two of bronchopneumonia and one of acute bacillary dysentery during the course of treatment. Another patient developed hematuria, cystoscopic examination revealing a few hemorrhagic areas which disappeared in the course of

one week. In fifty cases treated with typhoid, the above represents a mortality of 6%, but it should be remembered that most of these patients were treated with typhoid vaccine because the risk was too great for malaria.

4. *Serological*: Examination of the spinal fluid from within ten days to one month after cessation of fever therapy showed a decrease of total proteins and cells, occasional change in the colloidal gold curve and decrease in the Ross Jones and Pandey. After six months to one year, reversal or decrease in the strength of the complement fixation reaction was seen, a further decrease in the cells, Ross Jones and Pandey, total proteins, and a flattening of the Lange curve. These same changes were noted regardless of the form of hyperpyrexia used.

Comment. Our results show that malaria fever produces a profound, generalized effect on the patient manifested by increased morbidity and mortality, severe anemia, marked depression of the granulocytic response to infections, and a markedly prolonged convalescence. Most severe and prolonged are the changes seen in the cardiovascular system, in the form of hypotension and persisting electro-cardiographic disturbances. While Krusen⁹, Ritter and Volker¹⁰ found only a decrease in the amplitudes of the electrocardiogram and thought that fever was not especially harmful to the heart, we on the contrary found the changes in the E.K.G. to be much more severe; these not only concern the decrease in the amplitudes, but also very definite T wave changes, axis shifting, S-T deviations, and slurring and notching.

We agree with Kessler³, Wile and Hund⁴, who recently reported similar changes to ours and also feel that malaria has a drastic effect on the cardiovascular apparatus.

In contrast to this, typhoid vaccine therapy is found to be less exacting, the changes are less marked and less prolonged. Hypotension and changes in the electrocardiograph are usually only temporary and quickly return to normal. Although, as far as percentages in mortality are concerned, no marked difference was noted in our material between malaria and typhoid, it should be recalled that the mortality in the typhoid series was limited only to patients in Group C (complicated aortitis), patients who never would have been considered otherwise suitable for malaria.

It is therefore essential to have a rigid selection of cases for fever therapy on the basis of a careful evaluation of the cardiovascular apparatus with particular emphasis on the fluoroscopic findings. These criteria should be well-defined and rigid to permit an adequate evaluation; in this manner the risks taken in malaria treatment will be minimized. In our opinion the following criteria have proven to be of value.

1. The cardiovascular apparatus should not show any evidence of damage either clinically or, which is much more important, fluoroscopically. Patients in Groups B & C (aortitis) should not be treated with malaria since in our opinion irreversible damage occurs.

2. Patients should be in good general systemic condition.

3. We have found that if the blood pressure decreases between paroxysms to less than 70% of its original systolic basal level, the situation is deemed desperate and requires interruption of the malaria. Electrocardiograms must be taken before the institution of treatment and after the fourth chill as, in our experience, this procedure has been a valuable adjunct in evaluating myocardial insufficiency and averting frank or impending collapse. It is self-evident that in malaria therapy adequate support must also be given to the hemopoietic system; iron compounds, reticulogen, high caloric feedings, and vitamins are essential.

If the rigid criteria outlined above are applied, a large number of patients will have to be treated with typhoid vaccine, for which therapy the criteria do not have to be as rigid or as severe. We have thus treated without any permanent ill-effects, patients in Group B & C, and also those otherwise physically debilitated.

According to our findings, the changes in the cardiovascular system are much milder and not as long lasting. The blood pressure usually returns to its basal level within 12 hours. As a guard against any too great damaging effect, in typhoid therapy, of cases in Group C, it has been found expedient to administer the chills every 7 to 10 days. At least one should wait until the blood pressure returns to its basal level within 24 hours. In some patients of Group C in whom the risk would seem to be too great, we administer heavy metals for a period of three months prior to the induction of typhoid fever vaccine therapy.

In those cases treated with combined malaria and typhoid, although the vaccine fever itself did not seem to especially aggravate the changes resulting from malaria, it was also deemed expedient to wait for 2 to 3 months following interruption of malaria therapy before any further fever was administered.

In borderline patients in whom an increased number of fever hours would be desirable, and where there may be some question about the risk, administration of a triple dose technique of typhoid has been used and has proven of considerable value in these respects.

CONCLUSIONS:

1. General systemic and cardiovascular changes were studied in 173 cases of C.N.S. lues treated with hyperpyrexia.

2. Malaria is a very rigorous and debilitating form of treatment and is suitable only for patients in good physical and neurological condition and who have no fluoroscopic evidence of aortic involvement. (Group A.)

3. Typhoid vaccine treatment is less drastic, attended by lesser morbidity, is more easily controlled and can be safely administered to patients with aortic involvement.

4. The triple dose technique of typhoid administration is offered to increase the number of fever hours without the attendant drastic effects of malaria.

5. Emphasis is made on careful cardiovascular and general systemic evaluation with special emphasis on fluoroscopic diagnosis and careful E.K.G. and B.P. studies during the course of treatment.

BIBLIOGRAPHY

1. VonJauregg, Wagner: The Present Treatment of General Paresis. *Wiener Klinische Wochenschrift*. 52:1075, 1939.
2. Neymann, Clarence: The Treatment of Syphilis with Artificial Fever, *American Journal of Syphilis, Gonorrhea, and Venereal Diseases*. 22:92, 1938.
3. Kessler, M.: *Nervenarzt*: p. 187 (April), 1939.
4. Wile and Hand: Ten Year with Malaria Therapy in Syphilis: *American Journal of Syphilology*. 20:630, 1936.
5. Kurtz, Chester: X-ray Studies of the Heart in Syphilis: *American Heart Journal*, 6:67, 1930.
6. Stokes, John H.: *Modern Clinical Syphilology* — W. B. Saunders, Philadelphia.
7. Burnett, Clough: Cardiovascular Observations in 215 Neurosyphilitics. *Annals of Internal Medicine*, 8:327, 1934.
8. Moore, J.: Treatment of Cardiovascular Syphilis: *Archives of Internal Medicine*. 49:879, 1932.
9. Krusen, Frank: Council on Physical Therapy: *Journal of American Medical Association*. 107:1215, 1936.
10. Ritter and Volker: Malaria Treatment of CNS. Syphilis: *Vonderlehr, U. S. Public Health Service, Supplement No. 107*, 1938.

DISCUSSION

Dr. B. Hilkevitch, Chicago: I have listened to this paper with much satisfaction because it represents a careful study of an important problem — that of reducing the appalling morbidity and mortality of neurosyphilitic patients undergoing malarial therapy. For the greater part I agree with the essayist's statements but several points need elaboration.

The fluoroscopic diagnosis of the uncomplicated and complicated luetic aortitis is not at all easy. The criteria for its diagnosis is as follows: a dilatation of the aorta particularly of the ascending portion; a fusiform dilatation is pathognomonic. This is visualized by the presence of a shadow to the right of the sternum in an unbroken line of the entire aortic shadow. The presence of marked pulsations of these increased shadows makes the diagnosis more probable. The increased density of the aortic shadow is another diagnostic feature. However one must bear in mind that in many individuals of short and stocky stature the diaphragm has a high position; the aorta may appear dilated to the right of the sternum and may pulsate. This is especially true in the older age group where a hypertensive and arteriosclerotic aortitis is present. On the other hand in tall and slender individuals with a low position of the diaphragm an actual dilatation of the aorta may be masked. The increased density of the aortic shadow is an important diagnostic point in young individuals up to forty years of age. In people after the forty year group and particularly after the fifty year age group an increased density of the aortic shadow is not uncommon without a mesoaortitis luetica.

The diagnosis of complicated luetic aortitis — those with an aneurysmal dilatation — is chiefly a fluoroscopic problem. However the fluoroscopic diagnosis of an aortic regurgitation is a very difficult one and at the best only a suggestive one. The presence of a pulsating shadow to the right of the sternum with an enlargement of the heart of a typical aortic configuration would suggest such a diagnosis. However one must remember that in 20% of uncomplicated mesoaortitis luetica there is an enlargement of the left heart sometimes of a marked degree. For this reason the diagnosis of an aortic regurgitation ought to be and is in fact a clinical one. Fluoroscopic evidence is only of secondary importance. It also should be remembered that an experienced roentgenologist may fail to make a diagnosis in 15-20% of advanced cardiovascular lues.

I want to stress the fact that in making a diagnosis of cardiovascular lues one should use all diagnostic methods — a good history, a careful clinical examination and x-ray studies. Dr. Lieberman is often at a disadvantage because an intelligent history is difficult to obtain in his type of patients. Although the basis of a diagnosis of cardiovascular lues in Dr. Lieberman's series is chiefly a fluoroscopic one, I am impressed that the incidence is only a conservative estimate.

Cardiovascular damage produced during malarial therapy should be determined clinically, however the electrocardiographic changes may be an important adjunct in these evaluations. Many of the electrocardiographic changes are probably due to the extreme debility, severe secondary anemia and long confinement in bed of these patients.

Reviewing the causes of death resulting from malarial therapy, it is surprising to note that the incidence of cardiovascular deaths is insignificant.

In conclusion: — I should like to ask the essayists if there is a concurrent drop of the diastolic blood pressure in his patients who showed a considerable drop of the systolic pressure following malarial therapy. If there is a drop of the systolic pressure only, one could attribute it to myocardial weakness. If a drop in both systolic and diastolic pressure is present, there is possibly a more complicated mechanism at play. The factors of debility, anemia and long bed rest are possibly not insignificant contributory points in the lowering of the blood pressure.

Dr. Walter R. Kirschbaum, Manteno: I have used malaria for twenty years and I agree with all the conclusions Dr. Lieberman has made but there are two points I would like to make.

First concerning the deaths from malaria. There are three causes: 1. The brain affection by the malaria plasmodia which occlude the smaller brain arterics and capillaries producing thrombi, hemorrhages, etc. 2. Myocarditis and heartfailure. 3. The general septic stage involving all the bodily organs. These causes of death may be combined. I will not underestimate the importance of the exact examination of the cardiovascular system before and during the treatment. But in spite of the fact that about 60 per cent. of the paretics show more or less marked alterations of the aorta, there can be said that in post mortem examinations the changes of the aorta were not the primary cause of death or rare only. I found that most of them were deaths in consequence of vasomotor collapse and this collapse, central in origin, occurred relatively frequently but is not due to myocarditis or aortitis. It is interesting that some cases with relatively good aortas die in spite of their good heart and aorta from vasomotor collapse or other complications, originated by the septic stage in which the malaria organism is the cause. The high percentage of aortic lesions found in all the paretics may be counted as contributory cause of death in general and the danger for an average paretic to die from the aortitis is relatively small.

With reference to the typhoid vaccine treatment: This treatment may be used in patients only not apt for malaria. For deteriorated cases malaria is dangerous. Malaria treatment has to be used right in time and as early as possible. Its mortality rate is then about 5 per cent., the curative effect very high depending on the material of patients and the experience of the physicians.

Dr. A. A. Lieberman, Elgin (in closing): I feel it a privilege to have had Dr. Hilkevitch and Dr. Kirschbaum discuss this paper.

We had only a few autopsies available and in every one there was a septic complication, either dysentery or bronchopneumonia, etc. Examination of the myocardium did not reveal anything particularly specific for malaria; the changes were widespread.

Another point I wanted to bring up is that state hospital cases of cardiovascular lues seem to fall into a category all their own. This may be changed in the future along with an educational campaign, but in our cases it is our impression that these patients are generally in worse condition physically, neurologically and mentally than the average patient who is seen in the clinic or at home for treatment of lues. Most of our patients are debilitated in every way so that the risk is much greater. We have not emphasized this sufficiently but we think there is a definite correlation between morbidity and cardiovascular status. We have found that in patients with no x-ray evidence of disease there was less morbidity and mortality and fewer complications in general. Although young people with no complications and in good condition have occasionally suffered collapse, in general there is a definite correlation between aortic involvement and morbidity and the possibility for increased morbidity and increased physiologic changes are thereby increased. There are more electrocardiograph disturbances and susceptibility to infections, which we think are due to the result of malaria per se, which in addition to hyperpyrexia may produce an obscure toxin.

There is a question about the diastolic blood pressure dropping. We have indicated that there is a correlation. The pulse pressure appears to have increased, especially as we go up in the cardiovascular category. There will be a physiologic increased pulse pressure as a result of hyperpyrexia alone. That does not infer a myocardial damage or change because the effect of dehydration may also increase the pulse pressure a good deal. The only changes in the typhoid series were very high diastolic pressures and these were seen only in the group where there is a complicated form of aortitis.

I want to emphasize our general impression that the state institution patients as a whole, whether voluntarily admitted or admitted on commitment, are in worse general condition than the similar type of patient treated in the outpatient department of a clinic.

The human brain is like a freight car—guaranteed to have a certain capacity, but often running empty.—*Boys' Life*.

As the departing geranium said to the bright red rose, "I'll be zinnia!"

MODIFICATION OF THE USE OF TYPHOID VACCINE IN THE PRODUCTION OF HYPERTHYREXIA

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That typhoid vaccine has been used as a means of producing fever in the treatment of neurosyphilis in those patients who are resistant to malaria or who are in poor physical condition is common knowledge. Shortly after the introduction of typhoid vaccine for the production of hyperpyrexia, Cowie and Calhoun¹ pointed out that the principles underlying the production of hyperpyrexia with malaria and with dead typhoid bacilli are essentially the same, that is a reaction to a foreign protein. Despite the demonstration of a similar etiologic factor being responsible for the hyperpyrexia, malaria has been considered preferable by most investigators on the basis that the temperatures obtained by it were higher and more sustained than those ob-

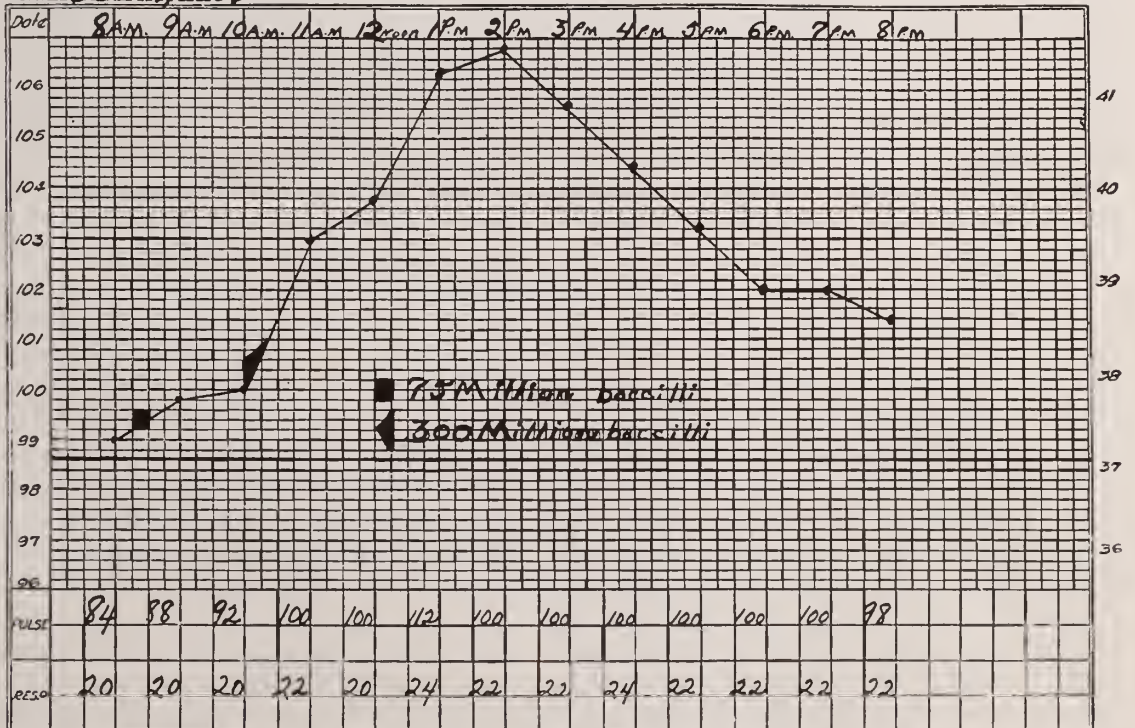
tained with typhoid vaccine. Using the usually adopted single dose method, McKenzie² treating 30 patients reported temperatures up to 107° F. the average being 103° F. Schlem³ reached a maximum temperature of 101.5° F. Kunde, Hall and Gerty⁴ obtained temperatures varying from 102° to 104° F. On some occasions, all investigators have had to use enormous doses to reach the higher temperatures. It remained for Nelson⁵ in 1931 and Driver and Shaw⁶ in 1933, to demonstrate a more effective use of typhoid vaccine administration. Nelson suggested that the typhoid be given in coupled or doubled doses, "the first dose given at any selected time and is of a size calculated to cause a slight fever, the second is given during the height of the fever produced by the first, usually at the end of the 2nd and 3rd hour. The second dose seems to have the effect of exploding the charge supplied by the first." Driver and Shaw, unaware of the work done by Nelson, also used the divided dose method in a series of 21 cases with excellent results. In the publication of Nelson⁵ and Driver and Shaw,⁶ no definite schedule was established as a standard dosage scheme. In Driver's and Shaw's⁶ paper, examples of amount of bacilli

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Name C. R.

Diagnosis

month Dec. 11, 1939



A sample of a better than average response to typhoid vaccine.

used showed that the first and second dose was equal. No mention was made of the results of the vaccine in the production of fever in the entire series of cases. Isolated case reports were given illustrating examples of satisfactory fever elevation with the double dose method. The schedules for the three cases illustrated showed variation. No mention for the basis of the dose variations in the individual patients was made. It would seem that any therapist wishing to adopt the method of Nelson or Driver and Shaw, would of necessity, have to follow the trial and error method of establishing his own therapeutic schedule.

At the Chicago State Hospital, typhoid vaccine has been used extensively. Several factors influenced the choice of foreign protein as a means of production of hyperpyrexia. Many of our patients were colored and, hence, resistant to malaria; others were in poor physical condition so that malaria would have been dangerous. The single dose method as used by the previously mentioned investigators, was adopted when therapy with typhoid bacilli was first instituted. Because of the enormous dosage of typhoid needed and the fact that the temperature elevations were frequently low, this method was found unsatisfactory.

Desiring to obtain temperatures above 103° F. for good therapeutic effects as suggested by Kirby,⁷ Winslow, Miller and Noble⁸ and unaware of the work of Nelson or Driver and Shaw, one of the authors suggested the use of a divided dose. Various doses were experimented with by the trial and error method until a definite schedule of typhoid vaccine administration which has been successful in raising the temperatures above 103° F. in 85.43% of the 801 times it was used, was worked out. Basically, the principle underlying the suggested schedule is that of Nelson and has already been stated. However, the modification offered by the authors is a definite expanding dosage schedule which uses a larger second dose following the first vaccine administration. The second dose is usually given two hours after the first if the temperature has not risen above 103° F. If the thermometer reading approximates 103° F. two hours after the first dose is administered, the second dose as given in the schedule should be somewhat modified.

Using the expanding dose method as illustrated in the proposed schedule and not once deviating from its suggested dosage, we have tried to induce hyperpyrexia in a group of 74

Suggested schedule for typhoid vaccine administration.

TABLE 1

1st day —	20 million bacilli followed by	50 million
2nd day —	30 million bacilli followed by	100 million
3rd day —	50 million bacilli followed by	175 million
4th day —	75 million bacilli followed by	300 million
5th day —	125 million bacilli followed by	450 million
6th day —	150 million bacilli followed by	600 million
7th day —	175 million bacilli followed by	800 million
8th day —	225 million bacilli followed by	1000 million
9th day —	300 million bacilli followed by	1500 million
10th day —	400 million bacilli followed by	2000 million

patients eight hundred and one (801) times. The results were as follows:

TABLE 2

Temperatures 108 — 109° F.	1 or 0.12%
Temperatures 107 — 108° F.	7 or 0.87%
Temperatures 106 — 107° F.	39 or 4.86%
Temperatures 105 — 106° F.	151 or 18.85%
Temperatures 104 — 105° F.	279 or 35.16%
Temperatures 103 — 104° F.	201 or 25.57%
Temperatures 102 — 103° F.	80 or 10.20%
Temperatures 101 — 102° F.	31 or 3.85%
Temperatures 100 — 101° F.	8 or 0.99%
Temperatures 99 — 100° F.	4 or 0.49%

As may be seen from the above table, 678 times or 85.43% of the expanding reinforced dose administration method was successful in raising the temperature to 103° F. or above. The temperatures obtained ranged from 99° F. to 108° F. with an average rise of 103.90° F. for all the patients. In most instances, the hyperpyrexia was fairly well sustained, ranging from one 1, to eight 8, hours of readings above 103° F. with an average period of three and one-half (3½) to four (4) hours. (See graph.) Temperature, pulse and respiration readings were taken every hour. No ill effects or complications were noted in the entire series of cases as a result of which hyperpyrexia could be induced daily without a rest period in between, thus shortening the hospitalization period materially. The most frequent complaint noticed was that of a headache which would be relieved by an ice bag. Chills occurring usually within the first hour following the first dose administration were treated by regular nursing technique.

CONCLUSIONS

1. A group of patients were studied as to the best method of typhoid vaccine administration in the production of hyperpyrexia. An expanding dose method consisting of small primary

doses followed by larger number of dead bacilli given at the height of the fever produced by the first was found to be most satisfactory.

2. A definite dose schedule is offered by the authors. The suggested schedule was successful in raising the temperature to 103° F. or above in 85.43% of the times it was used. The average temperature reached in this series of 74 patients was 103.90° F.

BIBLIOGRAPHY

1. Cowie, D. M. and Calhoun, Henrietta: Nonspecific therapy in arthritis and infections. *Arch. Int. Med.* 23: 69, 1919.
2. MacKenzie, J. M.: Treatment of general paralysis of insane by pyrotherapy. *Brit. J. Ven. Dis.* 5: 95-101, 1929.
3. Schlem, J. W.: U. S. Vet. Bur. Med. Bull. 6: 544-548, 1930.
4. Kunde, Margaret M., Hall, G. W. and Gerty, F. J.: General paresis: The effect of nonspecific protein therapy on the blood and spinal fluid. *J.A.M.A.* 89: 1304-1307, 1927.
5. Nelson, M. O.: Improved method of protein fever treatment in neurosyphilis. *Am. J. Syph.* 15: 185-189, 1931.
6. Driver, J. R. and Shaw, Henry C.: Divided doses of typhoid vaccine in the fever therapy of neurosyphilis. *J.A.M.A.* 101: 2016-2020 (Dec. 23) 1933.
7. Kirby, G. H.: *State Hospital Quart.* 11: 559-585, 1926.
8. Winslow, C. A., Miller, J. A., and Noble, W. C.: *Proc. Soc. Exper. Biol. & Med.* 13: 93, 1916.

SURGERY IN SYPHILITICS

WITH A STUDY OF CASES IN MENTAL HOSPITALS
104 CASES REPORTED

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Presented May 21, 1940 at the Sectional Meeting of the Physicians' Association of the Department of Public Welfare, State of Illinois, before the Centennial Meeting of the Illinois State Medical Society at Peoria.

The surgeon, in consideration of a patient for operation is keenly interested in the prognosis. He is desirous of knowing the probable outcome and the complications that may be expected. This prognosis may be modified by other existing conditions or processes. Thus, a minor operation, may, in an individual in a poor physical condition, carry a grave prognosis. One of these factors, syphilis, is considered in this paper and an attempt is made to determine the surgical risk of these patients. What is the probable outcome of a surgical patient complicated by an existing luetic infection? The question arises, in the presence of a syphilitic infection as to

whether elective surgery should be performed, cancelled or postponed until specific therapy is given. Morbidity as well as the mortality rate should be estimated. The possibility of wound infection, poor healing, evisceration, and gumma formation must be considered. The recollections from our classroom and clinic days are that operative results in luetic patients were poor, mortality and morbidity were high, wounds healed slowly and non-union frequently occurred in fracture cases.

The incidence of syphilis in patients in the Illinois State Mental Hospitals varies between seven and twelve per cent. Thus, to the physicians here present who are engaged in medical work in the mental hospitals, it is important in the consideration of patients for operative procedure to be able to estimate the risk in cases of early and latent syphilis, systemic and neurosyphilis, as compared to individuals free from this complicating factor.

From a ten year surgical experience in mental hospitals, it has been a clinical observation and impression, that luetics, not only systemic but also neurosyphilitics, with involvement of brain and spinal cord, undergo operative procedures with only a slight increase of risk as compared to the non-luetics. In order to confirm or correct this impression a study was made of the literature and a survey of the operative cases covering a two year period at two mental hospitals.

Mortality: In 1925, Goeckerman,¹ reporting on the operative procedures of 78 syphilitics at the Mayo Clinic, noted a mortality rate of 3.8%. In conclusion, he stated that luetic patients who have received specific therapy can be operated on with impunity and that individuals with an infection of long duration are on the whole poor surgical risks, but only in proportion to the damage their tissues have sustained. Thompson,² in 1926, stated that old syphilitics whose tissues have been damaged, particularly the cardiovascular apparatus, are poor surgical risks. He further adds that the cardiovascular apparatus of most old luetics is damaged. Scheffey,³ in 1931, reported on a seven year study of a gynecologic service. In 972 cases with negative Wassermann reactions, the mortality rate was 2.5% while in the 92 cases with positive Wassermann reactions (one, two, three and four plus) the rate was 4.3%. Homans,⁴ in his text-book of surgery,

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states, "the presence of syphilis seldom contraindicates an operation, for the syphilitic only becomes a poor risk when damage to vital parts of the body is advanced, and he is no poorer risk when damage is done by syphilis than by other diseases." Keidel⁵ reports that occasionally lues may play a large role in increased operative and post-operative mortality. Early cases should be operated on, after chemotherapy has been started. If syphilis is over two years duration it may be ignored if the physical condition of the patient is good. In the presence of cardiovascular or central nervous system syphilis, the surgical risk may be seriously modified. Wile,⁶ in 1934 and again in 1938, presented interesting articles on this subject. He concluded that the mortality rate is not increased in the early cases if surgery is delayed, if possible, for a few days until treatment is initiated and then continued post-operatively, and in the old cases if there is a history of specific therapy. In contradistinction, Maes and McFetridge,⁷ in 1936, reporting on a negro male surgical service stated that this disease made the patient a very poor surgical risk and attributed a large part of the death rate, on the service, to lues.

A survey was made of the operations performed during the past two years at the Elgin State Hospital and the Chicago State Hospital. Chart 1 lists the total number of operations and the mortality rate.

1. TOTAL NUMBER OF OPERATIONS AND MORTALITY

	No. Operations	No. Deaths	% Deaths
Non-Syphilitics	818	30	3.66
Neurosyphilitics	78	5	6.41
Systemic Syphilis	26	0	0.00
Unknown (Not Tested)	75	3	4.00
Total	997	38	3.81

A total of nine hundred and ninety-seven operations were performed at these two institutions during the past two years with a mortality rate of 3.8%. The non-syphilitics had a rate of 3.6%, the neurosyphilitics, chiefly cases of syphilitic meningoencephalitis, had 6.4%, and the systemic syphilitics no death rate. In the group listed "Unknown (not tested)," the majority of which was composed of employees, no Wassermann or Kahn tests were made. Deducting this last group, leaves a balance of 922 operations performed on mental patients.

In Chart 2 the cases are divided into major

and minor surgery. In the 606 minor cases, one death occurred in an old man subsequent to drainage of an ischiorectal abscess. The mortality rate for major surgery is high but one must remember that the majority of these operations were performed on mental patients, many of whom were uncooperative, frequently getting out of bed in spite of all precautions, removing drains, dressings and contaminating their wounds. Arp⁸ recently reported a mortality rate of 10 to 16% in major operations in mental patients. In major surgery the death rate varied from 0% in the systemic syphilitics, to 9.2% in the non-syphilitics and 19.2% in the neurosyphilitics.

2. MAJOR AND MINOR SURGERY AND MORTALITY RATES

	MAJOR			MINOR		
	No. Opera- tions	No. Deaths	% Deaths	No. Opera- tions	No. Deaths	% Deaths
Non-Syphilitics	324	30	9.25	494	0	0.00
Neurosyphilitics	26	5	19.23	52	0	0.00
Systemic Syphilis ...	13	0	0.00	13	0	0.00
Unknown (Not Tested)	28	2	7.14	47	1	2.12
Total	391	37	9.46	606	1	0.16

These figures of the syphilitics were subdivided in Chart 3 into the various fields of surgery for further analysis. Five deaths occurred in the neurosyphilitics; two were due to peritonitis in cases of perforated appendices with abscess formation; one, two weeks post-operatively, after an exploratory laparotomy with findings of miliary tuberculous abscesses; one due to a bronchopneumonia after a hydrocolectomy and one due to cardiac failure and bronchopneumonia after an emergency enucleation of an eye for a pan-opthalmitis, in a poor surgical risk. In the last two cases the hydrocolectomy and enucleation it appears that syphilis was a contributing factor toward the poor physical condition of the patients and their deaths. In the first three cases, the two perforated appendices with abscesses and the miliary tuberculous abscesses and peritonitis, the prognosis would be poor in any patient and syphilis contributed little, if any, toward these patients' death. The authors believe that only in two cases, syphilis was a definite contributing factor.

It is interesting to note that 30 rectal and 28 gynecological operations were performed with no deaths.

3. TYPE OF OPERATION AND MORTALITY

	Neurosyphilis		Systemic Syphilis	
	No. Operations	No. Deaths	No. Operations	No. Deaths
(a) General Surgery				
1. Intra-peritoneal . . .	13	3	4	0
2. All Other	14	1	1	0
(b) Gynecological	17	0	11	0
(c) Rectal	25	0	5	0
(d) E.E.N.T.	3	1	2	0
(e) Thoracic	3	0	0	0
(f) G.U.	2	0	3	0
(g) Orthopedic	1	0	0	0
Total	78	5	26	0

Morbidity: Next, let us consider the morbidity, the healing of wounds, incidence of infection and probability of local and systemic complications. Mondonca,⁹ in 1918, reported that syphilis may delay wound healing and reported three abdominal operations in which the wounds opened and healing was markedly delayed. Menninger¹⁰ in reporting 22 cases of syphilis, stated that difficulty was encountered in 72% of the cases. Gellhorn,¹¹ in 1929, mentioned three luetic cases in which the wounds broke open. Wile⁶ stated that in the early active syphilitic without treatment slow healing and sloughing may occur and the luetic infection may be disseminated. Likewise in old latent cases with a poor history of therapy, sloughing, non-healing and gummatous syphilides may develop post-operatively.

In contrast, Goeckerman¹ states that wounds of these patients heal satisfactorily, yet stressed the need for specific therapy. Thompson² listed 26 surgical cases without any increased morbidity. Scheffey,³ comparing 92 gynecological patients with positive blood Wassermanns against 92 non-luetic patients with similar operative procedures, noted that the complications were the same in both groups, about 26.5%. Stokes in discussing Scheffey's paper states, "The door has been closed on the old bugaboo that an operative wound in a patient with syphilis should not heal. This occurs, only if a gumma is incised." Homans⁴ and Keidel⁵ report similar observations.

To determine the morbidity in the luetic and non-luetic patients a careful detailed study was made of 306 consecutive surgical cases in one of the mental hospitals. Chart 4 lists the number of operations in each group and the percentages of local and systemic complications. The local complications, the greater number of which were wound infections, were highest in

the neurosyphilitics and lowest in the non-syphilitics. Delayed wound healing occurred in three non-luetic mental patients and in one neurosyphilitic. No gumma formation was noted in the total 104 luetic cases studied. The systemic complications consisted of respiratory infections, cystitis, pyelitis, thrombo-phlebitis, peritonitis and parotitis. One neurosyphilitic of the 28 listed developed a pyelocystitis giving a percentage of 3.5%.

4. SURGICAL COMPLICATIONS

	No. Operations	% Local	% Systemic
Non-Syphilitics	268	14.1	2.6
Neurosyphilitics	28	25.0	3.5
Systemic Syphilis	10	20.0	0.0
Total	306		

Therapy in Relation to Surgery: Most authors stressed pre-operative and post-operative specific chemotherapy, particularly in the early cases. The patients were divided into (1) recent cases of less than two years duration and (2) latent cases, and into those with or without previous adequate therapy. In emergency surgery, in recent cases, with a history of no treatment or poor treatment it was suggested that the operation be delayed, if possible, until one injection of neoarsphenamine was given. In elective surgery, in recent cases, all authors recommended specific therapy prior to operation, varying between three to four injections, to a combined complete course of neoarsphenamine and bismuth or mercury, with continuation of treatment during the post-operative and convalescent period. These recommendations were made, not only for the benefit of the patient, but also for the protection of the surgeon for many cases have been reported of the operator contracting this disease during surgical procedures. In the latent cases some authors stated that surgery need not be deferred for therapy, while others recommended a three or four week period of treatment with neoarsphenamine in conjunction with bismuth or mercury, if there is a poor background of specific therapy.

In the 104 luetics reported, in this paper, no treatment was given immediately prior to operation and only in one case during the post-operative period. All of the cases had, however, at least a course of combined chemotherapy during their institutional stay. In some of these mental patients, the specific therapy was given as long as five years prior to surgery. The neuro-

syphilitics had records of previous fever therapy combined with chemotherapy of trypanamide and mercury. The danger of neoarsphenamine or arsphenamine in patients with cardiovascular or hepatic syphilis should be emphasized. They should be placed on bismuth or mercury, in conjunction with potassium iodide for at least six weeks before the arsenicals are administered. Luetics with marked hypertension should be similarly treated and arsenicals used with caution.

Summary and Conclusion: 1. A survey was made of 997 operations performed during the past two years at the Elgin and Chicago State Hospitals. The surgical results of 104 patients, consisting of 26 cases of systemic syphilis and 78 cases of neurosyphilis were compared with 818 non-syphilitic patients.

2. There were no deaths in the cases with systemic syphilis. The mortality rate in the neurosyphilitics was higher than the rate in non-luetics. In three of these five deaths, however, syphilis did not appear to be a contributing factor, operations being performed for conditions carrying a very grave prognosis. In two, syphilis appeared to be a contributing agent. The mortality of neurosyphilitics was higher according to the statistical survey yet, after analysis of the causes of death the surgical risk of neurosyphilitics seemed comparable to the non-syphilitics.

3. Local surgical complications were higher in the neurosyphilitics but these were chiefly in the nature of wound infections. Difficulties in wound healing, as sloughing, evisceration and gumma formation were not encountered. Excluding infections, wounds of syphilitics heal as well as the non-syphilitics.

4. If there is a history of adequate specific therapy in the past, emergency and elective surgery can be performed on syphilitics without additional treatment or delay.

BIBLIOGRAPHY

1. Goeckerman, W. H.: Jr. Surgery, Gynecology and Obstetrics, 40: 77, 1925.
2. Thompson, L.: Southern Medical Jr., 19: 615, 1926.
3. Scheffey, L. D.: J.A.M.A., 94: 4, 261, 1931.
4. Homans, J.: Textbook of Surgery, Thomas, Publisher, Springfield, Ill., p. 191, 1931.
5. Keidel, A.: "Practice of Surgery," by Dean Lewis, Prior and Co., Hagerstown, Maryland, Vol. 12: Chap. 7, p. 1 to 78, 1932.
6. Wile, U. J.: Jr. Michigan Medical Soc., 33: 199, 1934.
Wile, U. J.: California and Western Med., 49: 7, 1938.

7. Maes, U. and McFetridge, E. M.: American Jr. Surgery, 34: 5, 1936.
8. Arp, L. C. and Arp, A. H.: Illinois Medical Jr. 77: 343, 1940.
9. Mondonca, J.: Brazil Med. Jr., 32: 361, 1918.
10. Menninger, W. C.: American Jr. Syphilis., 9: 545, 1925.
11. Gellhorn, G.: Annals of Surgery, 89: 327, 1929.

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THE ROLE OF NEUROSYPHILIS IN DISTURBANCES OF "ANAL SPHINCTER TONE"

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Many divergent views have been expressed in regard to disturbances of "anal sphincter tone." While some claim loss of sphincter tone is due to neurosyphilis, others as Buie¹, believe that it rarely is the cause. There are no available data as to the incidence of this condition. Neurological text-books state that loss of clinical anal tone usually occurs. Yaskin² and Stokes³ believe that rectal incontinence in neurosyphilis is a grave symptom. However, very little clinical or experimental work has been done in regard to this problem. Collier Martin^{4, 5} in 1904 was the first to describe comprehensively the "ataxia" of the anal sphincter in tabes dorsalis. The only thorough study in recent years is that of Denny-Brown and Robertson.⁶ Because of the conflicting opinions, a study was undertaken of patients in the Elgin State Hospital during the years of 1937 to 1939 inclusive, to determine the relationship of neurosyphilis and sphincter tone disturbances.

An understanding of the mechanisms of the anal sphincters and their pathological manifestations is predicated upon a clear conception of the anatomy and neurophysiology of the anal region, as well as the various reflexes involved. The manner in which the anus is kept closed is still the subject of much discussion. This is due to the fact that only recently have the various

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muscles involved been clearly demonstrated. It is believed that the anus is kept closed by the postural tone of three muscles, the external and internal sphincter ani and the puborectalis portion of the levator ani. Further, any factor that would affect the postural tone of these muscles would result in relaxation of the anus and manifest itself by loss of "anal tone." The innervation to these muscles is still in need of further study. The motor and sensory innervation is stated to be derived from sacral nerves 2, 3, 4,

and 5, which give rise to the pudic nerve which in turn divides into the perineal nerve to the levator ani muscle and the inferior hemorrhoidal nerve to the external sphincter ani muscle. Also, involved is the lesser splanchnic nerve of Morestin. Complicating this is the supply from the autonomic system. Fulton⁷ states that sympathetic fibres to the rectum are collected from the prevertebral sympathetic plexuses into the "presacral nerve" which distributes fibres to the pelvic viscera, and that the parasympathetic

TABLE I
PROCTOLOGICAL CAUSES FOR SPHINCTER
DISTURBANCES WITH LOSS OF ANAL TONE

Proctological condition	Degree of Tona Loss			Totals
	#	1/2	1/3	
Fecal Incontinence	10	20	5	35
Prolapsing Internal Hemorrhoids	12	13	4	29
Pruritis Ani	2	8	6	16
Ulcerative Proctocolitis	0	5	2	7
Prolapsa Rectum	0	2	4	6
Carcinoma of the Rectum	0	0	3	3
Federasty	0	0	3	3
Third Degree Tear from Pregnancy	0	0	2	2
Post-operative injury to sphincter	0	0	1	1
TOTALS	24	48	30	102

TABLE II
NONSYPHILITIC NEUROLOGICAL CAUSES
FOR SPHINCTER DISTURBANCES WITH LOSS OF ANAL TONE

Neurological Condition	Degree of Tona Loss			Totals
	#	1/2	1/3	
Hemiplegia with Cerebral Arteriosclerosis	4	5	6	15
Alcoholic Psychosis	0	8	2	10
Epilepsy with Psychosis	3	4	0	7
Organic brain disease, undifferentiated	1	2	1	4
Multiple sclerosis	0	1	2	3
Post-traumatic Psychosis	1	2	0	3
Chronic Epidemic Encephalitis	0	1	2	3
Paralysis Agitans	0	2	0	2
Little's Disease	0	1	0	1
Without Psychosis, Neurological	3	0	1	4
TOTALS	12	26	14	52

FIGURE I
ETIOLOGIC GROUPINGS IN
CAUSATION OF ANAL TONE LOSS

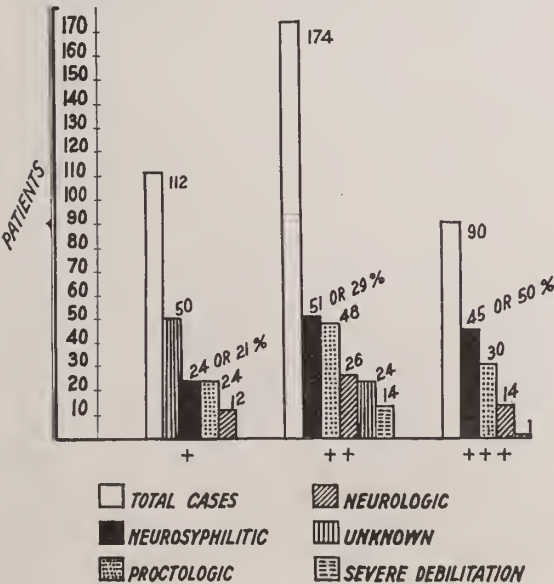
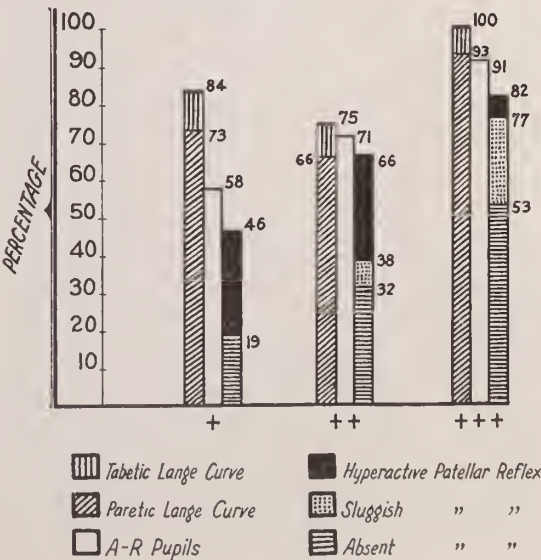


FIGURE II
CORRELATION OF
LANGE GOLD CURVE-
PUPILLARY AND PATELLAR
REFLEXES



supply to the rectum is found in the pelvic nerves arising from sacral levels 2, 3, and 4.

Clinically, sphincter muscle reaction may be determined by introducing the finger into the anal canal.^{8, 9} According to Sherrington, stretching the muscle is one way of testing its postural tone. However, when performing a digital examination, several reflexes come into play: the anal skin reflex and the stretch reflex of the anal muscles. This latter reflex or "myotatic reflex" was first described by Liddell and Sherrington,^{10, 11} who stated that the only sensory nerves responsible for the reflex were those arising in the muscle itself. Further, they proved experimentally, that the tension in the muscle was active and not passive, severance of the posterior nerve roots destroying it. Normal anal tone is maintained by a reflex originating in the mucosa of the rectal wall according to Denny-Brown and Robertson. They have shown this reflex to be entirely local in nature, the ganglion cells in the rectal wall initiating the motor impulses which produce a reciprocal relationship between distention of the rectal wall and relaxation of the anal sphincters. Thus, diminution of tone or a complete relaxation may be due to a loss of this latter reflex; to a destruction or degeneration of motor nerve fibres causing muscular atonicity as in any other lower motor neuron lesion; to an interruption of the anal reflex arc in its sensory component; or to disturbances in the parasympathetic and sympathetic nerve system.

We are primarily concerned here with the effect of neurosyphilis on anal muscle tone. The depreciation in muscular response (or activity), depends upon the amount of syphilitic involvement. It is believed that the chief pathological changes responsible for this condition are chronic inflammation of the posterior spinal ganglia and of the posterior nerve roots between the ganglia and the spinal cord. To some extent meningeal reactions and degeneration of the columns of Goll and Burdach may be responsible. Neurosyphilites presenting evidence of rectal distention were excluded from this study.

Of the 6,150 patients examined, changes in anal tones were noted in 376 or 6.1%. In none of these patients was the neuro-psychiatric diagnosis known prior to the digital and proctoscopic examination. Anal tone was graded as

follows: 1-plus, in which some loss of anal tone was detected on digital examination; 2-plus, in which the anal canal was sufficiently relaxed to permit reintroduction of the proctoscope ($\frac{3}{4}$ inch in diameter) without employing the obturator; and, 3-plus, in which a completely relaxed and patulous anus was observed (i.e., on separating the buttocks, the anus opened widely).

One hundred and two (27%) of the three hundred and seventy-six patients presented evidence of disturbed muscular tone due to local pathology, such as fecal impaction and prolapsing internal hemorrhoids (see Table 1). Fifteen patients (4%) had anal tone loss resulting from severe debilitation. In 76 (19%) no cause could be ascertained. In 175 (39%) some neurological involvement of the central nervous system was observed and the majority of these patients (125) were neurosyphilites. (See Figure 1).

The incidence of neurosyphilis in a psychiatric institution is usually much higher than that of any other type of neurological disorder. (See Table 2). Of the 480 neurosyphilites studied, 125 (25%) showed some loss of anal sphincter tone. Our findings are in marked contrast to that of Buie, who has rarely found loss of anal tone to be due to neurosyphilis. The significance of syphilis as an etiological factor becomes pronounced when it is noted that 45 of 90 patients with patulous ani (three plus tone loss) are neurosyphilites. Thus, it is apparent that a patulous anus should be regarded with suspicion and sufficiently important to make a thorough proctological and neurological examination mandatory.¹² As might be expected, this condition as we found it occurred in taboparetics and was probably due to an involvement of the posterior roots leading to impairment of the anal skin reflex and of the stretch reflex in the anal muscles.

Careful neurological examination revealed absent achilles, patellar reflexes, or pupillary changes in 85% of the patients with complete atonia. Of the remaining 15%, only five patients who could be examined after two years residence at the hospital, showed definite signs of early tabes dorsalis, indicating the importance of the preliminary rectal examination. At that time, there was no other indication of posterior root involvement. A suggestive correlation may be

noted on the Lange gold curve findings of the spinal fluid, the pupillary and patellar reflexes, and the degree of anal tone loss (Figure 2).

The importance of an objective determination of the sphincter tone is further emphasized by the fact that only eight out of 480 neurosyphilitics complained of rectal incontinence. Further, a proctological examination may indirectly indicate whether urinary disturbances in the early stages of neurosyphilis are of mental or posterior root origin by the simple expedient of determining anal sphincter tone. The number of patients with complete loss of anal sphincter tone due to neurosyphilis was 45 or 50%, which compares favorably with the 43% of patients with *tabes dorsalis*, who had early bladder disturbances reported by Stokes. He did not allude to the incidence of rectal disturbances in his cases. However, before arriving at a diagnosis of syphilis, one should carefully exclude local causes.

The question arises as to whether or not a slight degree of anal tone loss may be considered evidence of a definite neurosyphilitic involvement. We are not convinced that a 1-plus change on digital examination is significant, in as much as the possibility of error is too great. However, seven of fifteen patients classified as 2-plus on their first examination developed patulous ani in from several months to two years. Surprisingly, only ten of our neurosyphilitics had anal sphincter spasm, presenting evidence of local pathology.

Rectal crises, i.e., hyperpathic zone, was found in only three patients which is in conformity with the observations of Stokes and others.

We think that these observations may be of interest, both to the neuropsychiatrist and proctologist, because the subject of anal tone and its diagnostic possibilities has been much neglected.

CONCLUSIONS

1. Of the 6,150 patients examined in the Elgin State Hospital during the years 1937 to 1939 inclusive, 376 or 6.1% were found to have some loss of anal tone. Of these latter, 27% were due to proctological disturbances, 14% to non-syphilitic neurological conditions, 19% to no apparent cause, and 4% to severe debilitation.

2. One hundred and thirty-three or 35% of the 376 patients with anal tone loss were found to have neurosyphilis.

3. Further, of the 6,150 patients examined, 480 were neurosyphilitic. Hence, 28% of the neurosyphilitics examined had disturbances of anal tone. However, in only 25% was the relaxation due to involvement of posterior nerve roots.

4. Complete atonia may be an early sign of *tabes dorsalis*.

5. Rectal crises are a rare phenomenon, occurring in only three of our patients.

6. Complete loss of anal tone demands a careful neurologic and proctologic investigation.

DISCUSSION

Dr. B. Barker Beeson, Chicago: I do not think there is much left for me to say, although I might say something from the standpoint of syphilis because Dr. Pickett will touch upon the surgical side. I think this subject is very worth while. It is interesting to note that most of the studies along this line have been done in this country. The European surgeons, during the years when syphilis was diagnosed clinically, were afraid of operating upon the syphilitic. Some of the surgeons said that a syphilitic should not be operated upon at all. With the present diagnostic refinements those conditions have passed away.

There are three propositions to be considered in every case: the type of syphilis, the amount of treatment he has had, treatment in early syphilis and before operation, if possible, and followed up later on. However, operation in early cases is sometimes followed by normal healing.

I have knowledge of a patient who was operated upon for a tumor of the abdomen and the thing healed. Much to the surgeon's surprise the patient developed a roseola and went to someone else and was told that this was a case of syphilis.

I know of a man who gave no history of syphilis at all and who had what was thought to be tuberculosis of the lymph glands. He was treated surgically. Unfortunately, no serologic study was done and the man went along and these glands were incised and did not heal. Finally he was seen and my first impression was that it was a tuberculosis. He had lost weight and ran an afternoon temperature. A Wasserman was done and it was strongly positive. Then to be sure, a guinea pig was inoculated and this was negative. Under antisymphilitic treatment he made a remarkable recovery. This shows what may happen when an operation is done upon something that is syphilitic, and treatment has not been given. This man's case was proven to be congenital syphilis.

I have heard of another case which was operated upon for some liver condition. The surgeon made the incision and it looked like a malignancy and he gave no antiluetic treatment. He ran through the slides and considered it a sarcoma. Then they decided it was syphilis and it did not heal for a long time until antisymphilitic treatment was given. She had a recurrence of this gummatous hepatitis some years later.

I have enjoyed this paper very much and I think it should be a stimulus for more work of its kind.

Dr. William J. Pickett, Chicago: I agree with Dr. Wiltrakis that syphilis and surgery in the ordinary sense of the word are not a problem. Whether a man has syphilis or has been treated has little to do with the outcome of the case. I think the neurosyphilitic is a problem to the surgeon because we are coming in contact with neurosyphilis involving the abdomen in the sense of abdominal crisis. I think we fail to remember that an individual might have gall stones, gastric ulcer or duodenal ulcer or pancreatic disease and still have neurosyphilis. The fact that he has gall stones does not always mean that the pain is caused by the gall stones. Many a surgeon has been chagrined to find that cholecystectomy does not control the symptoms and that the patient still has pain and vomiting.

A year ago I saw a young man who was still in the hospital after a cholecystectomy. The wound had healed but the man still had pain around that region of the abdomen and still vomited. A cursory examination revealed fixed pupils and no patellar reflexes. We felt the condition was a syphilitic one and treatment was given with success.

Just recently I was embarrassed myself in a case of Chronic Duodenal ulcer. This man, sixty-one years old, had had hemorrhage from a duodenal ulcer and had been under treatment for some time, and x-ray findings were those of an ulcer. Sometime after the hemorrhage the patient developed duodenal obstruction, and vomited. We were able to aspire copious amounts of gastric contents and x-ray showed considerable gastric retention. We did a posterior gastroenterostomy which ordinarily is a thoroughly indicated operation. The patient was comfortable for a week; there was no retention, no vomiting, no pain. Then he got another attack of pain and vomiting. We thought of course he might be developing retention, so we put in a Wagensteen tube and got nothing on aspiration. He was given sedatives and the same thing happened twenty-four hours later. On careful neurologic examination we found him a case of neurosyphilis and all his gastric colic was not caused by the ulcer but from the neurosyphilis.

In the differential diagnosis or ruling out of a case of neurosyphilis the Wassermann and Kahn tests are of very little help because in most cases these are negative. Also the spinal fluid tests may be of little help, I think a very careful neurologic examination is important because the examiner may often find some change in the reflexes which will lead to a diagnosis.

BIBLIOGRAPHY

1. Buie, L. A.: Practical Proctology, Philadelphia, W. B. Saunders Co., 1938.
2. Yaskin, J. C.: Neurosyphilis. Cyclopedia of Medicine, Volume XI, Philadelphia, F. A. Davis Co., 1936.
3. Stokes, J. H.: Modern Clinical Syphilology. Philadelphia, W. B. Saunders Co., 1935.
4. Martin, Collier F.: Reflexes in Tabes Dorsalis, Neurol. Soc., Philadelphia, 1904.
5. Martin, Collier F.: Reflexes and Neuroses of the Rectum

and Anus. In: Treatise on Diseases of the Rectum and Anus, ed., by the A. B. Cooke, Philadelphia, F. A. Davis Co., 1916.

6. Denny-Brown, D. and Graeme Robertson, E.: An Investigation of the Nervous Control of Defecation, Brain, 58: 256, 1935.

7. Fulton, J. F.: Physiology of the Nervous System. New York, Oxford University Press, 1938.

8. Kallet, H. I.: The Rectal Manifestations of Tabes Dorsalis, Trans. Amer. Proctol. Soc., 1930.

9. Rainey, W. R.: Early Syphilis of the Rectum. Trans. Amer. Proctol. Soc., 1933.

10. Liddell, E. G. I., and Sherrington, C. S.: Reflexes in response to stretch (myotatic reflexes). Proc. roy. Soc., 1924, 96B, 212.

11. Liddell, E. G. T. and Sherrington, C. S.: Further observations on myotatic reflexes. Proc. roy. Soc., 1925, 97B, 267.

12. Zobel, J. Z.: Patulous Anus, Trans. Amer. Proctol. Soc., 1912.

RELATIONSHIP OF COUNTY SECRETARY TO THE EDUCATIONAL COMMITTEE

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The interest of the secretary of the County Medical Society is no doubt primarily in the results obtained by his society in the workings of the sub-committee of the educational committee namely the scientific service committee. It is more than likely that most of our county secretaries judge the educational committee by the scientific services of the sub-committee. And this is quite justifiable for this Scientific Service Committee's work is a part and a large part of the service rendered the county medical society by the education committee. Dr. Berghoff whom you have just heard is chairman of the scientific service committee and a good job he and his committee have rendered the state society and the various secretaries during the past year. To most of us I think the name of the Educational Committee immediately brings to our mind the concept of the committee's very efficient, never tiring and charming secretary Miss Jean McArthur — and in fact she is the Educational Committee.

You as members of the Illinois State Medical Society may take great pride in the work done by your Educational Committee. I think we are not mistaken when it is stated that this committee has a wider program than that of any other state in our Union. And that it executes its program most efficiently and most economically

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— far more so than like organizations in any other state.

The work of the Educational Committee however is more than that of furnishing programs and speakers for the various meetings of the many county societies who avail themselves of this service. The Committee was originally formed, if we are not mistaken, with the idea of educating the laymen of our various counties along medical lines and in some degree thereby to offset the advertising and propaganda and the erroneous information put forth by various advertising, quasi health institutions, the various cults and organizations perhaps well meaning but misdirected. After a time with the advance of progress in means and facilities of communication the cart almost got ahead of the horse, and it became necessary to add to the duties of the committee. That is, it became quite evident that the physicians themselves were not keeping up with the instruction that the laymen were receiving. Consequently the education of the physician himself, in certain lines, never mentioned in medical schools, became a part of the duties of the educational committee. And today we find the educational committee with duties that directly interest the county secretary, duties and services that are almost as diverse and as heterogeneous as are the usual daily activities of a family physician doing general practice in a rural community.

I think I am not overstating the case when it is said that the educational committee desires and is ready to be of assistance, with its trained personnel, its voluminous library and its multiplicity of potential activities to any physician in the various county societies who may desire its services.

Many of you who are county secretaries are aware of the fact that through this committee your county society has been able to bring "to successful conclusion health programs of many lay organizations." And may I bring to your attention the following words of the Committee secretary, Miss McArthur: "The contacts made by individual physicians and county medical societies constitute the most important part of a report of the educational committee whose program would be impossible without their support."

If the public in any particular portion of our state is to be brought face to face with the prob-

lems that the medical profession would desire them to be acquainted with, it certainly is the duty of the county medical society to initiate this movement. If this is true, it certainly then is the duty of the society's secretary to bring such a movement to his county and the educational committee stands all equipped and ready to assist him to the nth degree in doing this in many ways.

"Problems facing medicine today are of far reaching importance to the public and for this reason the Educational Committee has endeavored to give correct information to the public and to strengthen ties between the profession and the public."

The medical profession in the State of Illinois is on record as a unit and as individuals that state medicine is undesirable and is not wanted. In other words the physicians desire to control their profession in all its activities. This being the case the office of the secretary of each county society on behalf of its membership must undertake the enlightenment of the laymen of his county on various medical and allied subjects. The educational committee without the help of the local officers and society can not efficiently step into any county and render service of education that will be of any great value, any more than the government can direct "on whom or how" the physician shall practise. We as secretaries must see to it that the educational committee is employed in the right subject in our community. It has become quite usual for various organizations, such as the parent teacher's clubs, the Y.M.C.A.'s, the Womens' clubs, High School principals, etc., to apply directly to the educational committee office for speakers and whole programs to be put on along health lines. And this often without the knowledge of the medical men in their community. How much more the efficiency of such meetings could be increased if the local medical men assisted in the arrangements. In this way and in this manner only can the full development of any laymen education program for any given community be attained.

The Educational Committee encourages the secretaries of the local societies to, in turn, encourage lay organizations and schools to secure speakers from the educational committee's extensive list of speakers for addressing their meetings on medical subjects.

I suspect that there are some secretaries here, in whose towns the newspapers are printing health columns, so-called. I suspect that there are some secretaries here, also who have no idea from whom or where these health articles are obtained by their newspapers. There no doubt are some also who are finding, to their own disgrace, in their local daily papers such columns as the McCoy. And they are still doing nothing about it. The cleaning up of health columns in the local newspapers is just as essentially a part of the medical society's duties to its community as is the cleaning up of a diphtheria epidemic. And the Educational Committee has the anti-toxin to use in place of the dangerous health column. The committee already supplies 250 daily, weekly or monthly publications with correctly edited, timely medical articles for use; and these articles before they are used in any way whatever have been prepared with care, and then have been submitted to the various members of the educational committee for their O.K. or disapproval. In such a manner only very little material is likely to filter into print that will not meet with 100% approval by all physicians in the state. Through the county secretaries' office these articles can be made very timely and definite, thereby covering such subjects as may be uppermost in the readers mind. That is for instance articles on measles may be presented during the time in which that community is having an epidemic of measles and not when the laymen is discussing polio or some other topic.

Another service that is available from the educational committee may not be familiar to you all. That is, the *Package library*. Any doctor may secure from the educational committee a package library on any of some 175 different subjects to help him to prepare an address for a laymen group. In addition to this the educational committee also has in this package library, material available to laymen for the same purpose. The nearest contact the individual has to the educational committee is probably through the county society's secretary and it should be through him that the facilities of this educational committee in preparing material for addresses is made available to the individual physician and to the layman.

The arrangement of programs for the meetings of the county medical society very often

devolves on the secretary of that county. He very often arranges the meetings with but little time in advance. It has been proven that the meetings can become much more interesting and will attract a larger gathering if the programs are arranged with some thought a long time ahead. The reason for this is quite obvious. Most of the speakers who appear under the educational committee's arrangements are busy practitioners like yourself. Their services can not be picked up on a few days notice. But if sufficient time is allowed, in order that the desired speaker may arrange his work and time, then the educational committee can arrange for any county, almost any program that the county may desire. And this of course is all done without any expense to the county. May I make a plea for Miss McArthur that you as secretary in asking her to arrange such and such a program for your county, may I urge you to give her plenty of advance notice. The educational committee also in many instances handles the publicity concerning these county meetings. Postal cards are sent to the physicians in the county and adjoining community and notices are sent to the newspapers covering the certain district. In fact wide publicity is obtained; but this, again, can only be done efficiently if there has been sufficient advance time for the preparation. The office of the educational committee has found that meetings scheduled as far as four to six months in advance are better handled, both as to personnel on the program, and as to the publicity, and as to increased numbers in attendance.

Another point that is rather self evident and which has been thoroly proven by the educational committee is that the programs of the county meetings can be improved if there has been provision made for the discussion of the main papers, and not to have left such discussion to those who may on the spur of the moment enter into it. That is, whenever possible have local men discuss papers and participate in the programs. If the educational committee furnished an out of town speaker have local men appointed and men who will prepare to discuss the papers and include their names on the programs. This has been found quite beneficial and adds material to the impromptu discussion also.

There are some other activities of the educational committee that are directly in line with

the office of county secretary. For instance the educational committee is constantly looking for men who may be available for addressing lay groups, and men who are preparing papers on medical subjects for scientific meetings. If the county secretary will keep the educational committee advised of "men who can do things," these men will be given plenty of opportunities. "The Educational Committee is anxious to spread its services out so that all counties will have a part in its program."

It is almost needless to mention here, the use of the radio for education on medical topics. However it has been only through the organized efforts of the education committee that radio talks satisfactory to the profession have been heard. The material to be broadcast under arrangement by the educational committee, is first prepared by a doctor. After he has completed the preparation of his article, or dialogue the script is mailed to each member of the educational committee for their approval or alterations. This is done long enough before the scheduled appearance that alteration or correction if advisable may be discussed and attended to. After the script is returned O.K.'d, then the broadcast is heard with the author and the station announcer taking part. The success of this effort is demonstrable in the additional time that has been allowed the educational committee on some of the largest stations in Chicago.

Those secretaries of county societies who are in communities operating a broadcasting station are urged by the committee to cooperate with such stations and obtain time for medical education broadcasting. The committee is able to furnish copies of radio dialogues and talks to be given, but prefers that all such be instituted by the local county medical society and that they be conducted under its control.

If anything may be obtained (from these few minutes) that is of value to those of you who are secretaries I trust that it may be that you will not neglect your duty to assist in the education of the laymen of your community.

The day when we as physicians are just to plod along and practise excellent scientific medicine and do nothing else; this day is past. If scientific medicine is to be practised satisfactorily the laymen must want it. It can not be crammed down their throats. They must be

taught many things that pertain to our work — must be taught correctly — and not left to learn of such facts at the bridge club or through some of the propaganda wide spread by the cults.

Harmony among members of the county society is essential to the individual success of the members. Cooperation of the members in lay education will increase the demand for the services of the members in the practice of preventative medicine, as well as in other ways. We then who are secretaries have a responsibility in directing the activities of our county societies. And another duty in acting as the field man for the educational committee, in putting over the program arranged by the state medical society.

Our profession is so thoroughly grounded that if the laymen has some correct knowledge concerning our activities and our possibilities he will put us over in spite of ourselves. And in this perhaps is our greatest weapon against regimentation of the profession.

On behalf of the educational committee may I invite any and all of you to call at the office of our secretary Miss McArthur on the 14th floor of No. 30 North Michigan in Chicago at your convenience. And may I urge you as secretaries, to recognize the relationship you bear to the Educational Committee, and to function as such, more efficiently during this coming year.

HOW THE PUBLIC HEALTH NURSE WORKS WITH THE MEDICAL PROFESSION

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In every other branch of nursing it is taken for granted that the physician and the nurse work together for the welfare of the patient. This same relationship has not been well established in public health nursing, although the rules and regulations for public health nursing provide for it. We hear uncomplimentary remarks from various sources regarding the cooperation between physicians and nurses in public health. For example, a nurse who saw the subject of this paper, "How the Public Health Nurse Works with the Medical Profession," remarked, "Most of the time, they don't!" We

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find that many physicians have the same attitude as the nurse just mentioned.

The relationship between the medical and the nursing profession is recognized by leaders in both groups as the most important factor governing the success or failure of a public health nursing program. One of the great obstacles in the way of proper working relationships between the physician and the nurse, and one that is also a serious handicap to public health nursing, is the variety of interpretation of public health nursing which results in misunderstanding between physicians and nurses.

This is no doubt due to the rapid growth of the public health nursing movement, from the skilled nursing care of the sick in their homes to the present stage of development in which public health nursing is described as "an organized community service rendered by especially prepared graduate nurses to the individual, the family, and the community. This service includes interpretation, application, and teaching of medical, sanitary and social procedures for the prevention of defects, promotion of health, and may include skilled nursing care of the sick in their homes."

Disharmony will surely result if the physician understands that in public health nursing the nurse's responsibility ends in the home when bedside care has been given to the sick, while on the other hand the nurse sees such problems as children being constantly exposed to an active case of tuberculosis, or a prenatal case in the fifth or sixth month of pregnancy who has had no medical supervision, and undertakes to correct the situation.

Let us not overlook the fact that public health nursing is not a new branch of nursing, but one that has developed through the ages, keeping pace with discoveries and advances in medicine which has created a need for this type of nursing service. The discovery of the use of immune serum in the control of measles is an example of creating a need for public health nursing service. Since education of the parents is necessary before the scientific knowledge can be applied to practice, there must be some means of teaching the benefits of the discovery, and influencing parents to seek the treatments for their children.

Team-work is important, and no less so in public health nursing, a branch of preventive medicine, than it is in nursing the sick, a

branch of curative medicine. Therefore, the public health nurse who understands ethical public health nursing procedures will not be guilty of promoting the use of any such discovery in preventive medicine until she knows that it is being generally used by physicians and the local medical society has approved a plan of educational work. Proper working relationships will never be established until there is mutual understanding between physicians and nurses regarding the field in which the public health nurse must function, and the principles which govern her in her activities.

Information that would lead to proper interpretation of public health nursing and result in better understanding between physician and nurse is available. It has been prepared by the National Organization for Public Health Nursing, which was founded in 1912 for the purpose of promoting, developing, and standardizing public health nursing. Because this is a community service, with which physicians, nurses, health officials, and laymen are concerned, the activities in which the organization engages to fulfill its purpose are carried on in close cooperation with these groups. All the plans and policies where medical service is involved have been made with the help of leading authorities in the medical profession.

Among the many things that this organization has done for public health nursing, it has compiled and published a Manual to be used primarily by the nurse as a guide in her relationship to the agency employing her, the family she serves, the medical profession, technical procedure, and content of program. This Manual contains the information necessary to bring about more uniform understanding of what public health nursing really is. It has become the guide in public health nursing matters for schools of public health nursing, state departments of public health, and all properly organized nursing services. When the medical profession will use this as their guide in relation to nursing matters, we can hope for a closer bond between physicians and nurses in this field of nursing.

The public health nurse's activities in a community depend largely upon the health problem in which her employing agency is interested. The services may be rendered in a community by means of one or more of a dozen types of programs, built around the health needs pre-

sented by age groups or special health problems. These programs are classified as maternity, infancy, pre-school, school, morbidity, communicable disease, tuberculosis, syphilis and gonorrhea, mental hygiene, orthopedic, industrial and adult nursing service. Medical service is involved in every one of these programs, and the qualified public health nurse expects to work with the medical profession in carrying on her work.

Let us cite a specific instance of how the public health nurse works with the medical profession. We will suppose that a community has had several cases of diphtheria and the local public health nursing organization decides to launch a campaign to immunize children against this disease, a new project for this particular organization. In our Public Health Nursing Manual, we are advised that new projects involving medical service must be planned in close cooperation with the medical profession. It is standard procedure in well-planned public health nursing organizations for the medical profession to cooperate through the medium of an advisory committee appointed by the medical society. The nurse will advise this committee regarding the organization's decision to conduct a diphtheria prevention campaign, and will ask the medical advisory committee to meet for the purpose of deciding upon policies to be observed in the educational work with the parents. The nurse will not be satisfied for the committee to say, as they too often do, "Whatever you do will be all right with us," but will expect the committee to decide what parents may be told regarding such questions as —

1. Age groups that shall be immunized
2. Number of treatments to be given
3. Time that shall elapse between treatments
4. Location and hours where physicians shall administer treatments —
 - a. family physician's office — or
 - b. in groups at school hospital or other central location
5. Cost of treatments
6. What provision shall be made for those parents who are unable to pay

The medical advisory committee will also be expected to examine the literature and publicity material to be used in the campaign, for scientific accuracy. The nurse will abide by the decision of this committee without further contact with other physicians in the community, because she

expects this advisory committee to explain to each physician, either individually or in medical society meeting, the plans and policies that have been approved by their own profession. The nurse is then in a position to plan activities that should result in parents taking their children to the place designated for administering the preventive treatments.

The same principle of guidance and direction by a medical advisory committee applies in all phases of public health nursing. A public health nurse may be carrying on an antiquated program in tuberculosis, of supervising and caring for the advanced case of tuberculosis, but she will not be able to shift her efforts to preventive work until the medical profession helps to plan and will approve a nursing program that conforms to scientific knowledge in relation to control and prevention of tuberculosis. The nurse is a most effective means of educating individuals and families, but she must have definite instructions as to what she shall teach regarding such matters as medical supervision of adults and children who are contacts, general hygiene for the patient, disposition of contacts and cases in the home where proper care cannot be obtained.

In public health nursing, the first essential in working with the medical profession is the properly qualified public health nurse. Next to this is the medical advisory committee to which the nurse looks for guidance in planning new projects, adjusting already established programs to conform to progress in medicine, interpreting the nursing program to the medical profession, explaining and defending ethical public health nursing procedures, all of which will result in mutual understanding of public health nursing work and better and closer cooperation between the private physician and the public health nurse.

A GOOD OLD FASHIONED RIDDLE

Luke had it before;
 Paul had it behind;
 Matthew never had it;
 All girls have it once;
 Boys cannot have it;
 Old Mrs. Mulligan had it twice in succession;
 Dr. Lowell had it before and behind, too,
 He had it twice as bad behind as before.
What is it?

[Answer: The letter "L."]

ANTIPNEUMOCOCCIC RABBIT-SERUM.
ITS RELATION TO THE CASE-FATAL-
ITY RATE IN LOBAR PNEUMONIA
IN THE COOK COUNTY HOSPITAL

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The dispensing of antipneumococcic serum by the State of Illinois in cooperation with the United States Public Health Service begun in January, 1939, permitted its general use in the Cook County Hospital, Chicago.

Serum therapy was started in male medical Wards 45, 55 and 65, in January, 1939. Lobar pneumonia was diagnosed in 160 patients in these wards from January 13, 1939, to July 1, 1939. X-ray confirmation was obtained in 32 cases. Typing was done by the Neufeld slide method, and if not successful, mouse inoculation was made. Blood cultures were taken routinely. Specific types of pneumococci were found in 136 patients, 85 per cent. of the group. Their distribution is indicated in Table I. The unusually large number of Type II cases, 35.3 per cent., was due to a localized epidemic in shelters maintained by the government for men who were on relief.

TABLE 1

Antipneumococcic rabbit-serum, if available, was administered to all patients who had been ill less than 96 hours. It was also given to a few patients ill longer than four days, usually on the fifth day, the patients having entered the hospital on their fourth day of illness, but the type of pneumococcus not determined until the following day. Ophthalmic and skin tests were made to determine sensitivity. The rabbit-serum was given undiluted, intravenously, at the rate of one cubic centimeter in 30 seconds. The first dose was 2.0 cubic centimeters. The second dose, 30 minutes later, was half the intended total dosage, usually 8 to 20 cubic centimeters. The remainder of the antiserum was given one hour after the first dose. Occasionally the rate of administration was more rapid, as much as 300,000 units in 20 cubic centimeters of antiserum being injected within one-half hour.

This study was made possible by a grant from the Department of Internal Medicine of Rush Medical College.

Rabbit or horse antiserum was the only specific therapy given 47 patients within 96 hours of the onset of their illness. Four of these patients, 8.5 per cent., died. Antiserum was also given to 24 patients ill longer than four days, most of them on the fifth day of illness. Five of these patients died. There were no deaths among the first 45 patients given antiserum. Table 2 is a summary of the results of rabbit antiserum therapy.

TABLE 2

Rabbit antiserum was the only specific treatment, aside from symptomatic remedies as indicated in each individual case, administered to 61 of these patients. It was given to 38 patients within the first 96 hours of their illness, with three deaths; and to 25 patients on their fifth or later day of their infection, with five deaths. Horse antiserum, only, was given to seven patients within the first four days of their illness. One patient with Type VII infection died. The others recovered. One had a Type I infection; two, Type II; two, Type VII; and one, Type VIII. Horse antiserum was also given to one patient sick five days with a Type VII infection, who recovered. Rabbit antiserum and horse antiserum were administered to one patient ill three days with a Type II infection, and to one ill two days, with a Type VII infection. Both recovered.

Eight patients received serum therapy and sulfapyridine. Four died and are included in this report with the serum-treated cases. Three of the fatal cases are in the group given rabbit-serum therapy within the first 96 hours of illness. (see table 3). The fourth fatality was the patient who died from a Type VII infection treated with horse antiserum. The remaining four patients given sero- and chemotherapy with recovery are not included in the serum therapy group because of inability to evaluate the effect of serum therapy in the presence of chemotherapy.

Blood cultures were rarely positive when ordinary culture media were used. In May, special media were supplied by the Pneumonia Commission of Illinois. Using this media, positive blood cultures were obtained more frequently. The incidence of positive cultures of the different types of pneumococci and results of serum therapy are shown in table 3.

TABLE 3

The age of patients has been taken into consideration in judging the effect of antipneumococcic serum therapy. Twenty patients less than 40 years of age ill less than 96 hours were given rabbit antiserum only. Four were given horse antiserum only, and two were given both rabbit and horse antiserum. All recovered. Fifteen patients less than 40 years of age were given rabbit antiserum later than their fourth day of illness, with three deaths. One such patient, given horse antiserum, recovered. Eighteen patients over 40 years of age were given antiserum within the first 96 hours of illness, with three deaths. Three were given horse antiserum, with one death. Seven patients over 40 years of age were given rabbit antiserum after their fourth day of illness, with two deaths.

At least 100,000 units of antipneumococcic serum were given each patient treated with serum. An additional 100,000 units were given to patients over 40 years of age or if the patient appeared gravely ill. A similar amount was given for additional lobe involvement or if the patient had been ill longer than 72 hours. With combinations of these factors, as much as 400,000 units were given a patient in the first dose of antiserum. A second dose of antiserum, usually 100,000 units, was given if the blood culture was positive and the first dose of antiserum had been only 100,000 units. A total dosage of only 100,000 units of antiserum was given 12 patients, and between 100,000 and 200,000 units to 32 patients. The average dosage of antiserum given was 260,000 units.

Three patients were given 400,000 units of antiserum, one of whom died. Five were given between 400,000 and 500,000 units, also with one death. Three were given 600,000 with no deaths. Three received 900,000 units. Two of these patients died.

A critical drop in temperature occurred in 43 of the patients after rabbit antiserum was administered. The temperature was normal in six patients within eight hours; in 17 patients within eight to 12 hours; in 16 patients within 12 to 16 hours; and in four patients within 16 to 24 hours. More gradual decrease of the temperature requiring two days or longer to become normal occurred in the other non-fatal cases.

No serious reaction followed the use of antiserum. There were thermal reactions in five patients after being given rabbit antiserum, and in one after horse antiserum. Twelve patients had serum sickness after rabbit antiserum, one after horse antiserum; and one, after both rabbit and horse antiserum had been injected. They had slight fever, morbilliform rash, and stiff, painful joints. These symptoms cleared up in a few days.

Rabbit antiserum was given to four patients whose sputum contained the so-called "higher" types of pneumococci. One patient had a Type IX infection. He was given 160,000 units of rabbit antiserum on the fifth day of his disease. His temperature dropped from 106.0° to 99.0° in 24 hours, followed by a temporary rise to 103.0° for one day on his 9th day of illness, with a subsequent rapid drop to normal the same day. Two patients with Type XIV infection were given rabbit antiserum. One was given 120,000 units on his second day, with a drop in temperature from 104.0° to normal in 12 hours, and rapid convalescence. The second patient was given 120,000 units on the fifth day and again on the sixth day of his infection. He was much improved generally, but his temperature was irregular between 98.0° and 102.0° for the next seven days, until final convalescence began. Type XVI infection in one patient was treated with 240,000 units of rabbit antiserum on the fifth day with a critical drop in temperature in 16 hours from 105.6° to normal, and rapid convalescence.

There were no complications in any of the patients who were given antiserum and recovered, except four instances of relayed resolution.

Brief résumés of five patients who died after receiving antiserum follow:

F. H., a white male 36 years old, entered the hospital on the 5th day of his illness. He was a vagrant, an alcoholic for many years, had had little food for a week, and no medical care since the onset of his illness. His entire left lung was consolidated and his blood gave a positive growth of Type II pneumococcus. He was given 200,000 units of Type II rabbit antiserum within a few hours after he entered the hospital, but died within an hour after its administration.

J. K., was a 57-year old white male, a chronic alcoholic, whose source of food was from garbage cans. His first symptom, pain in his side, was noticed as he lifted the cover from a can. He entered the

hospital on the fifth day of his illness, with his right lower and middle lobes consolidated, white blood cell count only 2,750, with his blood culture negative. His sputum contained Type II pneumococci. He was given 480,000 units of Type II rabbit antiserum within 24 hours, but died with peripheral circulatory failure 28 hours after entering the hospital.

J. G., a white male, 59 years old, also an alcoholic, entered the hospital on the 4th day of his infection. He had consolidation of his right lower and middle lobes, and his blood was positive for Type III pneumococcus. He was given 320,000 units of rabbit antiserum within ten hours after entering the hospital, but died ten hours later with peripheral circulatory failure.

L. A., a 69-year old white male, entered the hospital on the third day of his illness. He had consolidation of his right lower lobe with Type II pneumococci in his sputum. He had generalized arteriosclerosis, his blood pressure was 84 mm. systolic, 52 mm. diastolic, and his blood chemistry revealed a creatinine level of 4.6 mg. per 100 cc. of blood. He was given 400,000 units of rabbit antiserum within 24 hours after entering the hospital. His temperature dropped from 102° to 99.2° within 24 hours, and remained between 100° and 98° for the next four days, when death occurred, apparently from cardiac failure.

A. D., was a 72-year old white male who had pernicious anemia. His hemoglobin was 60%, R.B.C. 2,800,000, W.B.C. 11,000. He entered the hospital on the third day of his illness with consolidation of his left lower lobe and Type I pneumococci in his sputum. He was given 200,000 units of Type I rabbit antiserum within six hours after entering the hospital. His temperature dropped from 104° to 99° in eight hours, rose to 101° 16 hours later, then gradually fell to 98° in the next five days. It remained normal two days then rose gradually to 105° in the following six days when he died. His pulmonary findings had gradually cleared up and his blood culture continued negative. He was given a blood transfusion and liver extract therapy during this period.

No autopsies could be secured on any of these five fatal cases.

No attempt was made to check the effect of serum therapy by using alternate case controls. There were 89 patients who were not in the serum therapy group. Many of them arrived at the hospital later than the fourth day of their illness. No pneumococcus was found in the sputum of 24 patients. Thirty-nine, or 43.8 per cent. of these 89 patients, died. Twenty-one died within 24 hours of their arrival at the hospital. The remaining 18 deaths represented a 26.4 per cent. case-fatality rate in the non-terminal group of 68 patients given no specific therapy.

Table 4 gives the results in the treatment of lobar pneumonia in the same wards in 1936, 1937, 1938 and 1939. Excluding the terminal cases, there was a case-fatality rate of 36.3 per cent. in 1936; 33.0 per cent. in 1937; 28.0 per cent. in 1938; and 19.4 per cent. in 1939. In 1937, 124 of the patients arrived at the hospital within four days of the onset of their illness; 35.4 per cent. died. In 1938, 109 of the patients were in the four-day group of whom 29.2 per cent. died. In contrast to this mortality, in 1939, there was only an 8.5 per cent. case-fatality in the group of patients who could be given antipneumococcic serum within 96 hours after the onset of their illness.

TABLE 4

The low case-fatality rate 8.5 per cent. in the group of patients given antiserum within 96 hours after the onset of their pneumonia is in keeping with reports of serum treatment elsewhere. Among the more recent reports in which the results of rabbit antiserum administration is described, Horsfall, Goodman and MacLeod¹ had a mortality of 3.7 per cent. in 54 cases; Nissen,² 6.2 per cent. in 97 cases; MacLeod,³ 5.4 per cent. in 74 cases excluding all Type III cases, and 11 per cent. in 100 cases including all Type III cases; and Wood,⁴ 14.3 per cent. in 42 cases, some of whom had been ill more than four days. Wood also summarized the results of several available reports on rabbit antiserum therapy regardless of the duration of the infection and found an average case-fatality of 9.3 per cent.

In general the reports of serum therapy in lobar pneumonia include only the results achieved in the groups of patients specifically studied. For comparison with the case-fatality rates in lobar pneumonia in previous years, the reports should indicate the effect the lower case-fatality rates in the groups of patients favorably affected have on the case-fatality rate of all the patients with lobar pneumonia during that period. The variation in the severity of the disease from year to year should also be considered in evaluating the effect of serum-therapy.

During the months of serum-therapy here reported, there was a case-fatality rate of 30 per cent. in lobar pneumonia in the three wards included, only slightly less than in the previous three years. Although either serum therapy or

sulfapyridine was generally used, the case-fatality rate in lobar pneumonia in the entire hospital from January to June, 1939, was 29.1 per cent.

The case-fatality rate for lobar pneumonia in the Cook County Hospital averaged about 35.4 per cent. for the past 28 years. Tice and Hernon⁵ reported this figure for the years 1911-1915. One of us⁶ found the same rate for the period of 1916-1922. The case-fatality rates for the subsequent years 1923 to July, 1939, have been tabulated by us from a survey of the histories, and the figures have varied from a low of 24.2 per cent (1932) to a high of 48.0 per cent. (1936), with an average of 35 per cent. In 18 of the 28 years from 1911 through 1938, the case-fatality rate was between 30.0 and 40.0 per cent. Table 5 shows the incidence and case-fatality rate in the individual years. There are 24,497 records included in this summary.

TABLE 5

During 1937 and 1938 in the three wards included in this report, 55 per cent. of the patients with lobar pneumonia entered the hospital within the first four days of their illness. There was a case-fatality rate of 33.0 per cent. in this group, accounting for one-half of the deaths due to lobar pneumonia during these years. Serum treatment offers the possibility of reducing by two-thirds the case-fatality rate in this group, or to approximately 10.0 per cent. Forty-five per cent. of the patients entered the hospital on the fifth, or later, day of their illness. Fifteen per cent. of this group were terminal cases, patients so ill that they died within a few minutes to a few hours after arriving at the hospital. They accounted for one-fifth of all the deaths. It is doubtful if any method of treatment will be helpful to this terminal group. The case-fatality rate in the non-terminal group ill longer than four days was approximately 28 per cent., as against a case-fatality of 21 per cent. in 1939 in the serum-treated non-terminal group ill more than four days. Theoretically, with this distribution of duration and severity of infection on entrance to the hospital it should be possible to reduce the case-fatality rate of lobar pneumonia to approximately 20 per cent. in contrast to the average of 35 per cent. in the past.

SUMMARY

The small number of cases in this summary permit only limited conclusions. Both horse and rabbit antiserum administration was commonly followed by a rapid, critical drop in the temperature and general improvement in the clinical condition of the patient, even with the so-called higher types of pneumococcal infection. No case of sensitivity to rabbit-serum was found. Even relatively rapid intravenous injection of concentrated rabbit antiserum produced no immediate serious reactions. Later serum sickness occurred with both horse and rabbit anti-serum, but was never of a serious nature. Although serum-therapy can reduce to a low figure the case-fatality rate in patients arriving at the hospital within the first four days of their illness, such a large percentage of the patients have been ill so long when they enter the hospital, and so many are already in a terminal condition, it is unlikely that the use of serum-therapy alone will reduce the total case-fatality rate below 20 per cent. for lobar pneumonia at the Cook County Hospital.

TABLE 1

INCIDENCE OF SPECIFIC PNEUMOCOCCUS TYPES

Pneumococcus	Total Cases
Type I	33 (25%)
Type II	48 (35.2%)
Type III	14 (10.2%)
Type IV	4
Type V	3
Type VI	1
Type VII	17 (12.4%)
Type VIII	3
Type IX	4
Type XII	1
Type XIV	2
Type XV	2
Type XVI	1
Type XVII	1
Type XIX	1
Type XXI	1

TABLE 2

RABBIT-SERUM THERAPY

Pneumococcus	Ill less than 96 hours		Ill more than 96 hours	
	Total Cases	Deaths	Total Cases	Deaths
Type I	11	1	7	1
Type II	17	1	6	2
Type III	4	1	1	1
Type IV	1		1	0
Type V	1		0	0
Type VI	1		0	0
Type VII	1		5	1
Type VIII	1		0	0
Type IX			1	0
Type XIV	1		1	0
Type XVI	0		1	0
Total	38	3	23	5

TABLE 3
INCIDENCE OF BACTEREMIA

Pneumococcus	Serum-Treated Cases		Non Serum-Treated Cases	
	Total	Deaths	Total	Deaths
I	4	1	0	0
II	5	1	4	2
III	1	1	2	2
VII	4	2	1	1
IX			1	1

TABLE 4

Wards 45, 55, 65	1936	1937	1938	1939
Total Cases	268	231	172	160
Case Fatality	41%	37.6%	34%	30%
Terminal Cases	20	16	15	21
Non-terminal Cases	248	215	157	139
Case-Fatality Non-terminal Cases	36.3%	33%	28%	19.4%

TABLE 5
INCIDENCE AND CASE FATALITIES IN COOK COUNTY HOSPITAL

Year	No. of Cases	Case Fatality	Year	No. of Cases	Case Fatality
1911	918	38.8	1926	1,020	40.1
1912	493	37.1	1927	1,032	31.7
1913	600	34.	1928	1,672	39.1
1914	597	38.6	1929	907	46.8
1915	331	29.7	1930	899	28.8
1916	500	40.2	1931	840	32.1
1917	1,395	37.6	1932	922	24.2
1918	978	41.1	1933	833	31.3
1919	354	35.8	1934	1,340	40.6
1920	524	38.7	1935	732	40.0
1921	488	26.6	1936	916	48.0
1922	776	37.2	1937	880	37.5
1923	850	35.8	1938	699	34.0
1924	1,066	32.5	1939 (Jan. 1-July 1)	473	29.1
1925	1,124	35.3			
TOTAL NO. CASES			24,497	35.4	

BIBLIOGRAPHY

1. Horsfall, Frank L. Jr.; Goodner, Kenneth, Ph.D., and MacLeod, Colin M.: AntiPneumococcus Rabbit-Serum as a Therapeutic Agent in Lobar Pneumonia. N. Y. Jour. Med. 38: 245, 1938.

2. Nissen, N. I.: Serotherapeutic Studies on Lobar Pneumonia, especially Treatment with Rabbit Antipneumococcus Serum. Acta Med. Scandinav. 98: 231, 1939.

3. MacLeod, Colin: Treatment of Pneumonia with Anti-pneumococcal Rabbit-Serum, Bull. N. Y. Acad. Med. 15: 116, 1939.

4. Wood, W. B. Jr.: Treatment of Pneumococcal Pneumonia with Concentrated Antipneumococcus Rabbit-Serum, J.A.M.A. 113: 745, 1939.

5. Tice, F., and Herndon, R. F.: A Clinical Study of Lobar Pneumonia with Special Reference to Prognosis, Ill. Med. J. 30: 388, 1916.

6. Kelly, Frank B.: Observations on 6,500 Cases of Lobar Pneumonia at the Cook County Hospital, Chicago, J. Infect. Dis. 38: 24, 1926.

PERIDURAL ANESTHESIA IN
GENERAL SURGERY
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The peridural block method is another milestone added toward the goal of perfect and ideal anesthesia. The idea is not new, but recently it has been rejuvenated.

In 1885 J. Leonard Corning of New York injected cocaine epidurally. In 1901 Cathelin produced caudal epidural anesthesia by injecting cocaine through the sacrococcygeal notch. In 1904 Einhorn perfected novocain. Sterzi, in 1905, described the peridural tissues. L  wen in 1910 popularized caudal epidural anesthesia. He injected the anesthetic through the sacrococcygeal membrane into the sacral canal and forced it up around the end of the spinal dura. Ten years later in 1920, Fidel Pages, a young Spaniard, discovered that peridural tissues could be infiltrated by lumbar and thoracic puncture and so anesthetize the abdomen and the chest.

In 1928 Heldt Maloney discovered that there is a negative pressure in the epidural space, but it remained for Alberto Gutierrez of Buenos Aires to show in 1933, how this phenomenon could be used in locating the peridural space.

In 1930 Dogliotti, an Italian surgeon, showed how to locate the peridural space by the spinal needle method using salt solution and how to produce anesthesia. He reported his work before the Italian Surgical Congress in 1931, and a year later read a paper on this subject before the American Congress of Anesthetists. In 1934 Harger of Chicago, reported 150 cases based on the method of Dogliotti, and in 1936 Odom of New Orleans perfected a method of localizing the peridural space and its tissues by means of a glass indicator.

ANATOMY

The peridural space surrounds the spinal dura and contains loose areolar tissue, fat, plexi of veins, arteries and lymphatics surrounding the dura covered spinal nerves. It lies within the spinal canal, is triangular in shape and extends from the foramen magnum to the coccyx. The

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upper end stops at the foramen magnum. The lower end is closed by the sacrococcygeal membrane covering over the sacral hiatus. The inner wall is the meningeal dura which surrounds the spinal cord; the outer wall is the covering of the ligamentum flavum. The cushion of peridural tissues within the bony spinal column extends through the intervertebral foramina, surrounds the spinal nerves as they run through the foramina and merges with the fatty and fibrous tissues in the paravertebral region outside of the spine. It is widest at the junction between the 2nd, 3rd and 4th lumbar vertebrae and narrows as it runs upward to the foramen magnum. It is smallest at the intervertebral foramina.

A fluid anesthetic injected into the region, say between the 2nd and 3rd lumbar vertebrae, spreads up and down in the peridural tissues from the foramen magnum to the sacrococcygeal membrane, surrounds the dura of the spinal cord, and under pressure passes out through the intervertebral foramina to anesthetize the spinal nerves in the paravertebral tissues. It may extend to the rami communicantes and the sympathetic nerve chain along side the vertebral column. As a result we get a complete sensory anesthesia, but no motor paralysis. The effect on the blood pressure is negligible.

When an anesthetic is injected through the sacrococcygeal membrane into the epidural space, it usually surrounds the distal end of the dura and goes out through the 2nd, 3rd and 4th sacral foramina. It anesthetizes the 2nd, 3rd, and 4th sacral nerves and the coccygeal plexus, but does not rise high enough to anesthetize tissues up to say the umbilicus, but results in a typical saddle type of anesthesia.

TECHNIQUE OF PERIDURAL BLOCK

Patients who are not suitable for general anesthetics or who could not stand a spinal, i.e., ruptured ectopics, or patients in shock can be given a peridural without endangering their lives.

PREOPERATIVE MEDICATION

We give 3 grains of nembutal the night before the operation, 3 grains of nembutal one hour before the operation and $\frac{1}{8}$ to $\frac{1}{4}$ grain of morphine sulphate, depending on the age and weight of the patient, $\frac{1}{2}$ hour before the operation. The purpose of this is to allay fear and

anxiety of the patient and decrease any convulsive effect that the anesthetic might have.

The patient is placed on his side. The thighs flexed on the abdomen and the legs flexed on the thighs, the anterior superior spines of the ilium are directly beneath one another at right angles to the table. The shoulders are in a similar position. This prevents a corkscrew angulation of the spine. The back is now surgically prepared. It is scrubbed with soap, water and alcohol, and painted with an organic mercurial-like tincture of merthiolate 1-1,000. The area is draped with sterile towels. The assistant now flexes the head on to the chest and arches the back.

Using a fine hypodermic needle attached to a 2cc. syringe filled with Novocain solution, a wheal is raised between the 2nd and 3rd lumbar spines exactly in the center. A No. 22 flexible, short bevel spinal puncture needle is attached to a 10 cc. syringe filled with sterile normal salt solution. Using pressure on the plunger of the syringe the needle is pushed in the mid-line at right angles to the long axis of the spine, through the skin wheal, the subcutaneous fat, the supraspinous ligament into the interspinous ligament. When the end of the needle is within the interspinous ligament it is almost impossible to inject any salt solution, because the ligament is tough, fibrous and doesn't give way. The injection is cautiously continued until the needle point passes through the ligamentum flavum and then suddenly when the needle point enters the peridural tissues the plunger is easily depressed, the salt solution is easily injected. Do not push the needle forward any more because you may enter the subdural space. Aspirate; if no cerebrospinal fluid or blood returns you are ready to inject the anesthetic agent. The end of the needle is in the peridural space or tissues.

The syringe is disconnected and filled with 7.5 cc. to 8 cc. of 2% novocain in normal salt solution or of 1½% metycain. This is injected through the spinal needle into the peridural tissues. The syringe is disconnected, the stylet placed within the needle and five minutes is allowed to elapse. During the five minutes the patient is observed to see his reaction to the anesthetic agent. He is tested out with a needle for anesthesia of the legs and asked to wiggle his toes, to see if by mistake a subdural anesthetic has not been given. If this mistake is made the

needle is pulled out and the patient operated upon as though he were given a spinal anesthetic.

If after five minutes no anesthesia of the toes or ankles has been established 38 to 40 cc. of 2% novocain or 1.5% metycain is injected into the peridural space, injecting 10 cc. at a time. If a higher anesthesia is desired, say up to the nipple line, the anesthetic solution is injected faster and with a little more force. If a low anesthesia is wanted as for an appendix or hernia a slower injection with less force is used. Gravity may be used to help diffuse the anesthetic up or down or on one side or the other. The patient may be put in the Trendelenburg or Fowler's position as needed.

After 15 minutes the anesthesia is established and will last 1 to 1½ hours. With this method the patient may be anesthetized from the suprasternal notch to the toes, without an appreciable sustained drop in blood pressure. There is no motor paralysis. The patient can move the toes and legs. It is strictly a sensory anesthesia.

The patient recovers from the anesthetic, farthest away from the injection first, i.e., in the perineum, then lastly at the site of injection.

REACTIONS

If the patient is sensitive to novocain, use metycain. Nupercain is not used because it is a quinine derivative and may be capable of heart injury. Pontocain is ten times as toxic as novocain. Percain is the same as nupercain. 2% Novocain is more toxic than 1% novocain, but 1% novocain is not as effective and gives poor results because it penetrates the nerve sheaths with difficulty.

The dose of novocain used is about 1,000 mg. A combination of 500 mg. of novocain and 100 mg. of pontocain may be used for sustained anesthesia. The greatest amount of novocain that may be injected according to Braun is 2,000 mg. However, that depends on the rapidity of absorption.

In the peridural tissues the absorption is quite rapid. If the anesthetic is pushed too fast, the patient goes into a partial shock as manifested by pallor, cold sweat, weakness, nausea and vomiting. This does not last long and is quickly corrected by a few whiffs of oxygen or aromatic spirits of ammonia.

One case developed convulsions which lasted five minutes. I believe the novocain got into the

circulation. These reactions are not nervous or psychic but are toxic in nature and occur more frequently with greater doses and faster absorption. They can be avoided by a more careful application of the principles of peridural anesthesia.

DISADVANTAGES AND CONTRAINDICATIONS

Local infection at the puncture site or disease of the vertebra, bony deformity, tumors of the spinal cord, distortion of the spinal cord, operations on the skull, operations in children and in hypersensitive individuals may be classed as contraindications. Patients subject to psychic pain, who are very much annoyed and terrified by being operated upon while awake, should not be given a peridural.

If the surgeon is busy and 20 minutes cannot be spared as in the large clinics, where so many operations are turned out per hour, this method may not be an advantageous one.

ADVANTAGES

Peridural block may be used by a general surgeon without waiting for a specially trained anesthetist to run a gas machine. It is an economical, fireproof anesthetic easily mastered. No new instruments are needed. It is safer than spinal anesthesia because the anesthetic cannot spread to the bulbar region and produce a bulbar paralysis. No cord injuries, meningitis or encephalitis occur. No late headache, nausea or vomiting. No dysuria. It lasts longer than a spinal. There is no motor paralysis or motor anesthesia. There is practically no sustained fall in blood pressure. No multiple punctures are used. No distortion of tissues from local infiltration and no delayed healing from the anesthetic. It can be used in patients with cardiac or pulmonary disease, as well as those in shock from ruptured ectopics, perforated intestines from gunshot wounds and ulcers, and in patients who are poor spinal risks, or who cannot take a general anesthetic. It has no effect on the liver, lungs, heart or kidneys and is used in the poor risk patients.

In short it has all the advantages of a spinal anesthetic without the dangers and will be adopted as a convenient safe procedure. Its technique will be mastered by an increasing number of surgeons. It will steadily progress in importance and will become more useful when an anesthetic agent is found that has half the toxicity of

novocain with a sustaining anesthetic power twice that of novocain.

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UNUSUAL TWIN PREGNANCY

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Three years ago this twenty-seven year old white woman had a normal pregnancy and delivery, followed by a mild psychosis lasting one year. She recently presented herself after having missed one period. About ten days before the second menses was due to be missed she was seized with generalized abdominal pain and diarrhea. A week later vaginal bleeding for a day preceded the passing of a mass which was examined and found to be the complete product of conception, six to seven weeks old.

Following the abortion, however, abdominal pain continued, associated with diarrhea. Quite abruptly these symptoms subsided, only to recur within a few days. Two weeks from this second onset sharp shooting pains developed in the right upper quadrant, radiating to the right shoulder and back. She was hospitalized for a gallbladder study. The findings were negative; and after three days of comparative comfort she was sent home.

Two weeks after her hospital confinement, and about six weeks after the first pain which preceded abortion, she was again seized with a sudden and severe attack of abdominal pain radiating to the right shoulder, associated with vomiting and diarrhea. Examination revealed a pelvic mass, marked abdominal rigidity, no vaginal discharge, and a temperature of 99 degrees. On arrival at the hospital the hemoglobin was found to be 35 per cent., the red count 3,039,000, and the white count 46,000, with 96 per cent. polymorphonuclear neutrophils. Diagnosis of pelvic abscess was made.

Blood transfusion was done, and the following morning she was operated upon. A ruptured tubal pregnancy was found. The fetus, about five inches long, was found floating free in the abdomen, attached by its cord to the placenta which was adherent to the greatly enlarged ruptured tube, the ovary, and surrounding small bowel and mesentery. With the exception of a small right pulmonary embolism on the fifth postoperative day, she made an uneventful re-

covery, leaving the hospital on the eleventh day.

She has remained well during the succeeding three months.

Ravenswood Hospital

THE SCOPE OF PROSTATIC RESECTION

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The decade from 1930 to 1940 marked an innovation and transition in prostatic surgery. At the beginning of that period practically all prostatic obstructions were treated by open surgery, either suprapubically or perineally. At the end of the decade transurethral resection had been added to the repertoire of the urological surgeon. There is no uniformity of opinion, however, as to the scope of transurethral resection, and the question is frequently raised as to whether this operation is applicable to all types of prostatic obstruction.

The future trend in prostatic surgery depends directly on the scope of the transurethral operation. The pioneers in this new field had been trained and were experienced in prostatectomy, and it was as judicial as it was inevitable that they should try out this innovation on the smaller prostates while relying on the suprapubic or perineal surgery for the larger glands. The future generation of urologists is, however, being trained in the transurethral operation as an established procedure, and the ultimate scope of resection will depend on their experience.

Adoption of transurethral resection has also been limited by the fact that the technique of no other operation is so difficult to acquire or to demonstrate. No instrument has as yet been devised whereby others than the operator himself can observe the actual procedure. It is only by observing each enlargement of the gland before and after its removal in a large and varied series of cases that a cystoscopist can become a proficient resectionist. To learn otherwise would mean that each succeeding surgeon would of necessity recapitulate the trials and the errors of the pioneers. The transurethral resection requires no more skill or dexterity than many another operation and once mastered it is not difficult to perform. However, the dissimilarity of prostatic enlargements is remarkable and the margin of safety narrow. To remove the gland inadequately is to fail in the operation, and to remove other than prostatic tissue is to do worse than fail. It

is to be hoped that in the future a system of dual lenses will be devised whereby the operative procedure can be observed in its entirety by others than the operating surgeon.

In suggesting what the future scope of the transurethral resection will be it is not the intent to disagree with those who prefer to operate on some or all of their cases by the suprapubic or the perineal route, but rather to answer in the affirmative the frequently asked question as to whether the transurethral procedure is applicable to most prostatic enlargements. Presented in evidence are the operations performed in the first calendar year of private practice with a follow-up review made a year later.

THE GROUP OF CASES is representative. Thirty-two resections were performed on twenty-five patients. No patient was denied resection.

THE AVERAGE AGE of the group was sixty-eight years.

COMPLETE RETENTION OF URINE had occurred in over half of the patients indicating that these were not operations of election but of necessity.

INFECTION OF THE URINE was present on admission in over half of the cases.

UREMIA was present on admission to the hospital in one-fifth of the cases.

STONES IN THE BLADDER complicated two cases. These were dealt with by first removing the intravesical projections of the medial lobe of the prostate so that the lithotrite could have proper access to the base of the bladder, and then crushing the stone. The balance of the prostatic resection was carried out at a second stage a few days later.

CANCER OF THE PROSTATE was the cause of the obstruction in two patients, one having skeletal metastases at the time of the operation. That patient lived for eleven and one-half months with continuous freedom from bladder symptoms in contrast to his extreme distress before the operation. The other case is active and voiding freely fourteen months after resection.

COMPLICATING DISORDERS were present as follows: Diabetes in two cases, marked hypertension in one, mental senility in three and coronary occlusion with cardiac decompensation in one. In the last instance the operation

was divided into two stages, each brief and without upset to the patient.

A FATALITY occurred in one case out of the thirty-two resections performed. If there had been no mortality I would not report the series as typical as the operation is not entirely devoid of risk. Due to a positive Wasserman test we deviated from our usual procedure of a spinal anesthetic and gave a general anesthetic from which the patient failed in two days to regain consciousness.

CONFINEMENT TO BED after the operation averaged 2.2 days. Omitting one case complicated by epididymitis, the patients were up and out of bed on the average of 1.7 days after the operation.

TEMPERATURE ELEVATIONS averaged at their peak 100.6 degrees and subsided rapidly. This lack of postoperative febrile reaction in spite of the fact that over half of the patients came to surgery with infected urine is attributed largely to the use of the Thompson resectoscope by which the tissue is cut with a tubular knife and fulguration limited to the individual blood vessels. The routine use of a two way catheter with a constant drip irrigation of the bladder also served to minimize febrile reactions.

CONFINEMENT TO THE HOSPITAL following operation averaged 8.1 days. Omitting two complicated cases (one with pneumonia and one with epididymitis) the average postoperative stay was 6.6 days. This average was increased by the fact that many patients stayed in the hospital until ready to leave the city.

THE IMMEDIATE RESULTS of the operation were evidenced by the fact that no patient was permitted to leave the hospital until he was emptying his bladder satisfactorily.

RESULTS AFTER A YEAR are that all but two patients are living and doing well (one patient died of pneumonia and another of metastases). The patients were observed in the office at intervals until the prostatic urethra had healed. Urinary infections were treated where necessary. Subsequent inquiry has been made and patients interviewed when possible. All but one patient is voiding to his satisfaction. A patient who had a stricture preoperatively has required subsequent dilatations. There has been no loss of sphincter control, even in the two patients with malignancy.

TWO STAGE OPERATIONS were carried out in seven cases; three being by election (two cases complicated by bladder stones and one by cardiac decompensation) and four of necessity. In the large and vascular glands it is better not to persist too long at one operative session but rather to return the patient to his room in good condition and bring him back in a few days for a second stage. Our custom has been to limit the procedure to 45 or 50 minutes of operating time. A small spinal anesthetic will usually last an hour, thus permitting a few minutes for observation by others before and after the actual operating. At times a spinal anesthetic will wear off distressingly soon which, in the past, has necessitated an extra operative session. Recently we have overcome this difficulty by supplementing the spinal anesthetic when necessary with a little sodium pentothal intravenously and have been very well pleased with innovation. By injecting 3 cubic centimeters of metrazol at the conclusion of such anesthetic, the effect of the pentothal is immediately counteracted and the patient is awake before leaving the operating room.

There are, however, certain prostatic enlargements that cannot be resected in one stage. These are the large soft adenomas of the lateral lobes. At the time of the initial resection, the lateral lobe enlargements are cut back as far as available and the bladder neck appears to be wide open. The patient may, however, be unable to void, and at reexamination a few days later it will be observed that prostatic tissue from farther back in the lateral lobes has protruded into the urethral passage. This tissue is now readily available to the resectoscope and can be cleared away without difficulty and with the assurance that the bladder neck will remain widely opened. In this type of prostatic hypertrophy the two-stage resection is the operation of choice as it maintains to the patient all the advantages of the transurethral procedure while prolonging his hospital stay only by the five days which constitute the optimal interval between stages.

The future trend in prostatic surgery will depend directly on the scope of the transurethral operation. In the first decade of its existence many urologists have not relied on resection in dealing with the larger glands. The purpose of this presentation is to suggest that in the future urologists will find transurethral resection

to be applicable to most prostatic enlargements. In support of this belief, a series of unselected cases is analyzed as to the types of risks undertaken, the average postoperative confinement to bed and to the hospital, and as to the results obtained.

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ENVIRONMENT AND THE PATIENT

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The so-called "horse and buggy doctor" was without many of our modern diagnostic aids, and in this respect we of today often picture him as working at a decided disadvantage. In truth, however, the old-time family doctor, irrespective of what other handicaps he may have had, possessed one distinct advantage which we of today, who practice in large cities and see most of our patients in our offices and in hospitals, do not have. And that was his opportunity for learning certain facts about the patient's environment which often had an important bearing upon his condition. That the physician may not have taken full advantage of this opportunity, or may not even have recognized what it offered him, can be explained by the fact that the intimate interrelation between physical, mental, and emotional factors in disease was not understood in those days as it is today.

But nevertheless the opportunity was there, as it still is for practitioners in rural communities, and small towns today. The physician who visits his patient's home can learn more regarding environmental factors which may be playing a part in the illness than the patient could tell about himself in the physician's office.

Visits to the home afford an opportunity for the physician to become acquainted with the various members of the patient's immediate family, and perhaps his relatives. He can observe for himself any disharmony that may exist between them and the patient. He can learn important facts with regard to their temperaments, moods and habits. He can see for himself what hygienic conditions exist in the home, and can deduce many facts that help him build up a complete picture of the patient. If capable of interpreting what he observes, he can many times place his finger on factors which are playing a part in the patient's illness.

It is my opinion that we city practitioners, because of the necessity we are under for seeing our patients largely in our offices and in hospitals rather than in their homes, must devise some way of obtaining this information about their environments, in all cases where it is required, if we are to make a proper diagnosis. Without such knowledge, we are at a distinct disadvantage. With it, we will find that many puzzling conditions will immediately become clear.

It is not my desire in the present discussion to add confusion to our already overtaxed methods of diagnosis and treatment. It is rather my purpose to point out how a knowledge of the patient's environment may often be a diagnostic short-cut in many conditions, and may assist in lessening recurrences of illness and shortening convalescence.

The literature contains relatively few references to the influence of home environment upon disease.

Dr. Foster Kennedy¹ in an address before the Academy of Medicine, February 11, 1938, states that "the physician is the handy man of the community and should be in a position to advise mothers and fathers." In this sense, he must not be content with merely treating physical symptoms, but must have an understanding of the psychological factors which may be helping to cause them. "It is just as important," says Kennedy, "as giving bromides and will save a lot of it in later life." Later he says: "As physicians, we must broaden our field of responsibilities from a preventative rather than a curative point of view." The eliminating of environmental factors which may lead to physical and mental disturbance must surely be a step in this direction.

J. G. Fitzgerald² is another who recognizes the importance of a study of the environment. Addressing the Thirty-Fourth Annual Congress on Medical Education, February 14, 1938, he said: "Let there be no misunderstanding. Man's environment is of profound importance."

According to Dr. James Houlse,³ "Life expresses itself in conduct or behavior; hence, if one is to understand human behavior either in its normal or its abnormal phases, one must study in detail both the individual and his environment. Furthermore, it must be realized that man is more than a biologic organism; he

is also a social being, growing and adapting himself to a specific environment. Hence fully to understand human behavior, one must study the individual as a psychophysical organism that is attempting to adjust to a specific environment."

Dr. Wallace Marshall believes that we, as practicing physicians, must be fully aware of the presence of environmental tension in our patients; if it is present, our common sense will guide us to an adequate solution. We must protect our patients from the effects of force and irritation, whether these be in the form of an "acute abdomen" or domestic difficulty. Preventive medicine has a most important place in such matters.

It remains for Robert Britt⁴ to sum up the ideas of the others and to point to specific instances of how the patient's environment may actually produce definite physical and mental symptoms. He says: "To do justice to the patient, the physician must take into consideration not only the laws of laboratory procedure but also the laws which regulate the reaction of man to his environment even though these laws cannot be formulated in mathematical or precise physical terms. In treating the patient as a subject with a disease and to look upon the human characteristics of the patient as irrelevant and to ignore his life situations may cause one to overlook many factors essential for an understanding of the symptoms of the disease. The emotional and instinctive life of the patient, the family pattern, economic and social situation, may be essential factors in understanding and treating patients when symptoms may not at first suggest a complex origin. A consideration of these factors makes intelligible such symptoms as persistent headache, insomnia, gastrointestinal disturbance, fainting, palpitation, variations in blood pressure, the frequency of attacks of vertigo, refractive disorders, pelvic and abdominal complaints.

That some of our larger medical schools are now taking into account the importance of the patient's environment is seen in the fact that Yale, Vanderbilt, Syracuse, Johns Hopkins, and possibly other university medical schools are including environmental case study in their courses of instruction. This study, according to Leathers, directs the interest of the student to individual cases rather than to groups of people.

Leathers⁵ describes the study as follows: "A particular clinical and public health problem is undertaken in the study of the patient in reaction to his family, his home, his occupation, his social-economic status, and to the official and unofficial health and welfare agencies whose aid may be invoked in the solution of the treatment involved. These cases are selected cooperatively by the clinical and public health departments and the social service division of the hospital. A report is finally made by the student to the class, and representatives of the agencies concerned are invited to attend. This method of teaching affords an unusual opportunity for the student to obtain some idea of the background of disease, its significance in the economy of life and the factors that should be considered in attaining the best results in the treatment of both the patient and the disease."

I believe a study of the environment of the patient by the family doctor would not only assist him in diagnosis, but would also restore him in a measure to his rightful position which has, of late, been subject to attack by various cultists and other types of "healers."

Social workers are today in a position to furnish physicians with information as to the environments of patients who are seen in clinics or dispensaries, but for other patients who visit the physician in his office there is no such outside agency that can assist. The information must be obtained from the patient himself, and this is a matter which will often tax the physician's ingenuity and tact to the utmost, since too many direct questions will sometimes antagonize the patient and make him evasive in his answers.

It may be argued that there is no need for this sort of investigation in the upper classes, but I believe statistics will substantiate the claim that many of the divorcees, suicides, child trancies, etc., are in the upper classes. Divorce is often caused by unrecognized, physical ills. If the doctor were consulted as often as the lawyer, the break up of many marriages might be prevented.

Mothers and fathers of problem children are wondering today whether the reason for their children's behavior lies in themselves, or in the discipline or lack of it in the home. Often, of course, the cause is a physical one, which is not recognized by them, or if recognized, is neglected. Such physical causes of abnormal conduct are often easier to correct than the environ-

mental ones, the reason being that the doctor, especially in a large community, who sees the child only in his office, has no knowledge of home conditions.

Recently, much attention has been paid to the health of executives of corporations. The attempt to build up and maintain health in persons of this class calls for an investigation of home conditions no less than the case of an underprivileged worker, yet the investigation is seldom made.

For many years it has been recommended that persons over 40 should have periodic physical examinations, and that children should have physical check-ups in their schools. Although this may be done, the examinations, in *both* cases, fail to include an investigation of home conditions.

The value of a comprehensive examination which includes a study of environment should be self-evident to any physician who has had patients come to him who have previously gone from doctor to doctor, and have either been operated upon needlessly, or have been told to go home and forget their troubles. Many times the troubles will be found at home.

A few examples will show the extent to which environmental conditions may affect health.

Dr. I. S. Cutter⁶ relates the case of a high school freshman girl, who complained of fatigue, loss of appetite, and nervousness. She had entered high school with excellent grammar school grades. Her course in high school comprised five subjects. She was so conscientious about her work that only one of her lessons could be prepared during the day. This meant carrying books weighing ten to twelve pounds back and forth to school each day and the preparation of an average of four assignments at night. It was too much for her. Sleep was cut short and a deep-seated type of nervousness appeared in the offing. The only remedy was a reduction in her program which was followed by the alleviation of all symptoms.

If the doctor had not been alert to environmental influence, much time would have been lost in treating the case and permanent damage might have been done.

Mrs. N. appeared at a clinic in 1936 suffering from pain, nausea, and indigestion. After an x-ray examination, a diagnosis of duodenal ulcer was made and treatment was instituted. A

good result was obtained in a few weeks and the patient disappeared for a time. On her return, she stated that she had been entirely well for several months, but recently had noticed a return of her old symptoms. Treatment was again given for the ulcer and again a good recovery was made, only to return in a few months. At this time, an investigation was made of the patient's home conditions and it was found that a recurrence of the ulcer activity coincided with an alcoholic debauch of her husband.

An executive was examined in my office for insurance, at which time an elevated blood pressure was found. Several repeated observations confirmed hypertension but on his return a year later, the blood pressure was normal. He then told me that during the first examination he was obliged to be up at night because of a new baby. This loss of sleep together with his office duties evidently caused some elevation in blood pressure.

Very often a reduction in blood pressure is caused by adjusting some environmental influence and no medicine is needed.

I do not mean to imply in the foregoing discussion that the family doctor needs to be an expert psychologist. I believe he is sufficiently well acquainted with psychological problems in a general way to determine whether any are present in a given case.

It is difficult, however, at times to obtain an accurate account of environmental conditions from the patient due to his reluctance to confide in the doctor. If the latter can gain the confidence of the patient and then get over to him in a friendly way the idea that there is certain information he needs before he can have a proper understanding of the case and make a correct diagnosis, he will experience less difficulty than if he fails to make this explanation. Of course, if he can obtain the information he desires without the patient's feeling that his private affairs and home life are being pried into, so much the better.

A physical examination and requisite laboratory tests should, of course, be made before any investigation of the environment is undertaken.

Following is a suggested outline, or check list, which may serve as a guide to the physician in his office when undertaking to make a study of the patient's environment:

HYGIENE.

1. Ventilation
2. Sleeping conditions
3. Lighting facilities

DIET.

1. Regularity of meals
2. Preparation of food
3. Are meals well balanced?
4. Food eaten by different members of the family

SOCIAL CONDITIONS.

1. Family background including temperamental traits — epilepsy, migraine, alcoholism, psychosis, invalidism
2. Early personal development — walking, talking, dentition, feeding, tantrums, bed wetting and night terrors
3. Attitude toward family — attachment to father or mother, antagonism, only child
4. School adjustments — truancy, failures, stealing, etc.
5. Sexual information and source
6. Mood reactions
 - Optimistic
 - Pessimistic
 - Easily frightened
 - Feelings easily hurt
 - Temper
7. Social Adaptability
 - Timid
 - Shy
 - Impulsive
 - Good loser
 - Shirk responsibility
8. Neurotic Tendencies
 - Physical comfort
 - Blushing
 - Food
 - Alcohol
 - Drugs
 - Superstitions
 - Anxieties
9. Family Unrest
 - Indifference
 - Incompetence
- Physical defects
- Mental defects
- Quarrelsome type
- Too much discipline

Recently one hundred and seventy-four case records from the dispensary and medical wards of a hospital have been reported⁷ with special reference to the bearing of the social studies carried out. In 71 per cent. of the patients studied, some adverse social condition was definitely related to the illness in a causal relationship and in 26 per cent., the social difficulty constituted the main etiological factor.

Miss Thornton of the Presbyterian Hospital in New York City has divided social factors into two classes — those of subsistence and those of

satisfaction. The former includes loss of work, insufficient clothes, food, etc.; and the latter, personal maladjustments which cause emotional disturbances sufficiently severe to bring about or aggravate illness. 39 per cent. of Miss Thornton's cases had disturbances of subsistence and satisfaction, 30 per cent. of subsistence alone, and 11 per cent. of satisfaction alone. These figures are not applicable to illness in general. They are based on a selected group of underprivileged individuals.

Doubtless the majority of doctors will claim that they are too busy to undertake the type of investigation here suggested, but if the doctor is conscientious and wants results he will attempt it. Of course, the better cooperation he receives, the more satisfactory the results will be.

It is obvious that he will be unable to alter some influences but this does not lessen his responsibility to discover them, if possible. Such influences should be pointed out and remedied, whenever practical.

I realize that certain medicines are specific for certain diseases and that there is no need for investigation of the environment in many cases. In others, however, it may be the only key to the solution of the patient's difficulties which the doctor needs.

In conclusion, I wish to emphasize that, in giving medical service, we must consider all the influences surrounding the patient. I know this is well known, but how often neglected. We, as physicians, study the patient's disease with great care but, as Meyer says, neglect his illness.

REFERENCES

1. Kennedy, F.: Address before the New York Academy of Medicine, February 11, 1938.
2. Fitzgerald, F. G.: Thirty-Fourth Annual Congress on Medical Education, Feb. 14, 1938.
3. Houlose, J.: *Journal A. M. A.* 3: 2447, 1939.
4. Britt, Robert E.: *Journal of Missouri Medical Assoc.* 34: 440, 1938.
5. Leathers, W. S.: *Journal A. M. A.* 3: 1517, 1938.
6. Cutter, I. S.: *Chicago Tribune*, April 2, 1938.
7. Robinson, G. Canby: *The Patient as a Person*.

Said one eye to the other: "There's something between us that smells."

GOOD REASON

A party of tourists came upon an Indian brave riding a pony. A heavily burdened squaw walked beside him.

"Why doesn't the squaw ride?" asked the tourist.

"Ugh," grunted the Indian, "she got no pony."

UNUSUAL AUTOPSY FINDINGS IN A CASE OF BRUCELLOSIS TREATED WITH SULFANILAMIDE

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CHICAGO

Brucellosis (Malta fever, undulant fever) is endemic in certain areas of the United States; however, it is relatively uncommon in this locality. The usual mortality rate of this disease is reported as 2 per cent. During the past eight years there have been about 640,000 admissions to the Cook County Hospital and only 29 cases of brucellosis have been reported. During this period 13,508 autopsies have been performed, two being cases of brucellosis.

The first case is of the usual type with septicemia and no apparent localizations of the brucella organism. The agglutination test for brucella melitensis was 1-1,280. The patient contracted bronchopneumonia and died thirteen days after admission to the hospital. Blood culture showed streptococcus viridans four days before death. Whether the bronchopneumonia was due to this organism or the brucella organism was not determined.

The second case died in spite of treatment with sulfanilamide and at autopsy, presented unusual findings which are presented and discussed in this paper.

CLINICAL HISTORY: G. P., white male, aged 30, was admitted to the Cook County Hospital, Chicago, on June 30, 1938. The patient, a clerk, had had lobar pneumonia in 1922 and a duodenal ulcer in 1935. The latter was complicated by severe hemorrhage. For the past three years the patient had been well. No history of exposure to brucellosis could be obtained. On June 28, 1938, he developed severe abdominal pain which was localized in the right lower quadrant. The pain was relieved by an ice bag within several hours. He vomited several times after the onset of this pain. On June 29, he experienced several chills, lasting about an hour each. The fever increased after each chill. Drenching sweats followed the chills. That evening he experienced shortness of breath and a feeling of marked fatigue. There was no cough, hemoptysis or pain in the chest. His appetite had been poor since the onset of his illness. There was no disturbance of the bowels.

PHYSICAL EXAMINATION: The patient was a well-developed, well-nourished male patient who appeared toxic. Beads of perspiration stood on his

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forehead. Cyanosis of the head, neck and upper extremities was marked. His respirations were 28, but not labored. The pupils were normal. Physical examination of head and neck were normal. Over the right lower lobe the percussion note altered and the breath sounds suppressed. There was no change in fremitus. The examination over the rest of the lung fields was normal. The cardiac area was normal in all respects and the blood pressure was 100/70. There was slight muscle defense noted over the lower abdomen, especially on the right side. The liver and spleen were not palpated. Throughout the illness the spleen could not be palpated but the splenic area was thought to be enlarged to percussion. Physical examination otherwise was noncontributory.

LABORATORY FINDINGS: The blood count at entrance showed a hemoglobin of 88 per cent, a red cell count of 4,620,000. Throughout the course of his illness there was a gradual decrease in the hemoglobin and red cell count. The lowest determination of the red cells was 2,840,000. By blood transfusions his count was maintained at approximately 3,500,000 with hemoglobin of 60-70 per cent. The white cell count on entrance was 5,900. Except for two days during the development of the thrombophlebitis and pulmonary infarct, the white blood count was never over 9,700. Differential count always showed 80 per cent polymorphonuclear cells with 1 to 4 eosinophiles. The urine was essentially normal throughout the course of his illness. An occasional trace of albumin was the only abnormality noted. All stool examinations and cultures were negative. An anterior-posterior x-ray of the chest, made on entrance, revealed bilateral increase in hilar markings with considerable thickening of right interlobar pleura and calcification of the hilar lymph nodes. There was a slight infiltration into the lung parenchyma in the right base. Both Wasserman and Kahn tests were negative. The blood Widal test was negative. The agglutination tests for b. typhosis, "H" and "O" antigens, and for b. paratyphosis, "A" and "B" antigens were negative. On July 8 the agglutination test for brucella antigen was negative. On July 14 the agglutination test for br. abortus and br. porcine was positive, 1-40, while the agglutination for br. melitensis was positive, 1-2,560. On August 3 the same tests were repeated with 1-2,000 for br. melitensis and no agglutination for br. abortus and br. porcine. The intradermal skin test for brucellosis was not made. Facilities for determining the opsonophagocytic index were not available. Blood cultures were repeatedly negative, although special technique for brucella organisms was not used.

CLINICAL COURSE: The fever ranged from 99° F. to 105° F. and was of septic type rather than an undulating type of curve. The pulse rate varied from 85 to 160 and, until the last few days of his illness, it was usually 100 or below. The respiratory rate was elevated to 28 on entrance but within 24 hours was 20-24 and remained so until the development of the pulmonary infarct, when it was elevated proportionately. Sweating was a notable feature. It was profuse, necessitating three to four complete changes of

bed linen daily. As this continued day after day, weakness and weight loss (187 to 151 lbs. in 44 days) became increasingly evident. Malar flush and herpes simplex of the lips developed (on July 3, lasting for about 7 days). Migratory pains of the shoulder, elbow, knee and ankle joints developed after the second week of the illness. Frequent complaints of chest pain were noted. They were never severe but of such character as to be annoying to the patient. On July 24 patient complained of sudden pain in the left chest, accompanied with weakness, cough and hemoptysis. On August 3 tenderness and voluntary rigidity of the epigastrium developed. Nausea was present. Vomiting occurred several times over the next three days and diarrhea was present throughout this period. There was no appreciable response to therapy. Anorexia became more marked. Life was sustained by intravenous feedings and blood transfusions. Stupor developed August 11, and patient died August 12.

TREATMENT: Four blood transfusions of citrated (500 cc. each) were given during the course of the illness. Intravenous saline and dextrose solutions were given on eight occasions. One typhoid inoculation (25,000,000 organisms) was given intravenously. A repeated injection was not attempted due to severe reaction encountered after the first dose. Sulfanilamide was started July 18. A total of 480 grains was given by mouth and intravenously during the next two weeks. Cyanosis developed three days after the drug was started and for this reason it was discontinued. (At that time cyanosis was believed to be a contraindication for continuing the drug.) Three days later, however, it was administered again until marked cyanosis developed. Since no favorable reaction was noted, the drug was discontinued.

SUMMARY OF NECROPSY PERFORMED FOUR HOURS AFTER DEATH — The body is that of a well-developed, fairly well-nourished, white male. The left thigh is moderately enlarged and edematous, the fingernails are slightly cyanotic, the pupils are round and equal and the teeth are in a bad state of repair. The abdominal cavity: The peritoneum is free and contains a few cc. of yellowish, translucent fluid, the liver is 10 cm. below the xiphoid and 5 cm. below the right costal margin, and the spleen is at the level of the left costal margin in the mid-axillary line. The right diaphragm is at the 4th rib, the left at the 5th rib. The left pleural cavity contains 400 cc. of dark, reddish, turbid fluid and the right contains focal fibrous adhesions over the anterior aspect of the upper and middle pulmonary lobes. The pericardial sac is free and the heart weighs 275 gms. The right ventricle is moderately dilated and the wall is 4 mm. thick. The left ventricle is slightly dilated and the wall measures 17 mm. in thickness. The myocardium is pale brownish red and friable. The first measurement of the aorta is 73 mm. and the intima contains fatty hyaline plaques 1 plus. The pulmonary artery measures 75 mm. and is smooth. The coronary arteries are unchanged.

The right lung is crepitant throughout and there are focal fibrous adhesions over the anterior aspect of the upper and middle lobes. There is a sub-pleural calcified Ghon tubercle 15 mm. in diameter in the upper lobe. The bronchi are normal. The upper lobe of the left lung is slightly emphysematous, while the lower lobe is partly atelectatic. In the base of the left lower lobe there is a firm dark red, wedge-shaped area of infarction, 60 x 30 mm. A medium sized branch of the pulmonary artery to this area is occluded by a recent thrombus. The mucous membrane of the stomach is thin and pale yellowish-green in color. There is a defect in the mucosa in the first part of the duodenum, 1 cm. in diameter and 2 mm. in depth, the edges are slightly raised and indurated and the floor of the ulcer is greenish-brown. The spleen weighs 710 gms., is soft and the capsule is thin. On sectioning, it is dark purple-red, very moist and the markings are indistinct. A few small firm wedge-shaped infarcts are present. The liver weighs 2,530 gms. The consistency is firm and cut sections are pale brown color with light tan acinar centers. The gallbladder contains greenish brown bile and the mucosa is thin. The pancreas is firm, pinkish-tan and uniformly lobulated. The splenic vein contains a small firmly organized thrombus that partially occludes it as it passes the head of the pancreas. This thrombus extends into the pancreatico-duodenal vein where it is undergoing necrosis and suppuration and forming a small extra pancreatic abscess. The mucous membrane of the small intestine is pale brown and covered with grayish-brown mucinous material. There are a few periappendiceal adhesions and the mucous membrane of the appendix contains small areas of ulceration. The large intestine is moderately dilated, edematous and slightly injected. The thyroid, adrenals, kidneys, rectum and G. U. system are essentially unchanged. There is a firmly adherent, partially organized blood clot which extends from the left iliac and femoral veins into the vena cava.

MICROSCOPIC ANATOMY

Spleen: The lymphatic tissue is slightly reduced. The lymph follicles are small and irregular in shape, the pulp is congested with red blood cells. The endothelial cells are increased and rather large. Scattered through the pulp are giant cells, some with numerous small nuclei, others with a few large hypochromatic nuclei. Some of the giant cells show free protoplasm in the center with several nuclei arranged about their periphery. Most of these giant cells are surrounded by small areas of lymphocytes.

Kidney: Bowman's space for the most part is free and most of the glomeruli have congested capillaries. Some of the glomeruli are lobulated and are partially adherent to the capsule. The tubular epithelium is swollen and granular and the lumen of the tubules contains precipitated protein. In several places there are hyalinized glomeruli surrounded by round cells and the corresponding tubules are atrophied. There is a moderate infiltration of lymphocytes and some plasma cells throughout.

Liver: The sinusoids are slightly dilated about the central veins and contain red blood cells and several polymorphonuclear leucocytes and lymphocytes. The liver cells, for the most part, are swollen and granular and those near the central vein contain greenish, granular bile pigment. The Kupffer cells are moderately increased in size and there is a moderate round cell infiltration in the periportal fields. A moderate amount of fat is seen in the liver cells, especially in the region of the central vein.

Lungs: Most of the alveoli are collapsed but occasionally a few are open and contain a pink staining homogeneous material. The bronchi and bronchioles are collapsed and frequently contain polymorphonuclear leucocytes, large mononuclears and fibrin in their lumina. The epithelium occasionally shows metaplasia to squamous cell type. The connective tissue surrounding the bronchi is edematous and slightly thickened. In one area the entire architecture of the lung is destroyed. Around this area there is a diffuse congestion of the capillaries with red blood cells and infiltration with polymorphonuclear leucocytes. Near this area a large vessel is occluded by a laminated, necrotic mass composed of red blood cells, white blood cells and fibrin. This clot does not appear to be attached to the vessel wall.

BACTERIOLOGY: Smear from pancreatico-duodenal vein reveals many small gram-negative bacilli morphologically the brucella group, pus cells and occasional gram-positive cocci in chains. Culture of stool shows no evidence of pathogenic organisms. Culture of spleen shows *b. coli*, *staphylococcus aureus* and *streptococcus viridans* (probably contaminants). Blood agglutination for *brucella melitensis* was 1-5,120 dilution.

ANATOMICAL DIAGNOSIS: Undulant fever.

Thrombophlebitis of the left femoral vein with extension into the left iliac vein and inferior vena cava. Large hemorrhagic infarct in the left lower pulmonary lobe with hemothorax. Organizing thrombus in the central part of the splenic vein, extending into the adjoining pancreatico-duodenal vein with secondary suppuration and extra-pancreatic abscess. Marked infectious hyperplasia of the spleen. Parenchymatous degeneration of heart, liver and kidneys. Fatty changes in the liver. Chronic ulcer in the duodenum. Focal fibrous adhesions in the right pleural cavity. Slight eccentric hypertrophy of the heart and moderate dilatation of the right ventricle. Calcified Ghon tubercle in the right upper pulmonary lobe. Compression atelectasis of the lower lobe of the left lung.

DISCUSSION

Certain phenomena in this case are worthy of mention and review. Thrombophlebitis of the splenic vein with partial occlusion of the vein and thrombosis of the pancreatico-duodenal vein occurring with brucella infection has not been reported as far as we are able to find. The

tissues in this area underwent necrosis and supuration forming small extra pancreatic abscesses. It is believed that this process started eight days before death, when nausea, vomiting, abdominal pain, tenderness and voluntary rigidity of the right upper quadrant were noted. An infection of the gallbladder was considered clinically at this time. However, a definite diagnosis was not made. In retrospect there were no signs that could be looked upon as pathognomonic for the pathology found. Mettier et al¹ reported a patient who recovered from undulant fever after removal of the gallbladder and feels that perhaps it may act as a reservoir for the brucella organism similar to the manner in which it will harbor the typhoid organism. There are few reports of localized lesions that have undergone necrosis and suppuration. De La Chappelle² reports a case of vegetative endocarditis and abscess formation, Luciani³ one with large abscess formation following septicemia, and Gottlieb⁴ reports a case with subdiaphragmatic and liver abscess. *Brucella melitensis* abscesses resemble those in tuberculosis in chronicity but are usually accompanied by pain. The absence of ascites, and hemorrhages from the stomach and intestine is probably due to the lack of complete occlusion of the splenic vein by the thrombophlebitis.

Thrombophlebitis and pulmonary embolism have been rare complications of brucellosis. The incidence of thrombophlebitis has been reported as low as 1-300, and as frequent as 1-80.¹⁰ The left femoral vein is most commonly involved and when this complication occurs it usually manifests itself 10 to 30 days after the onset of the illness. *Brucella melitensis* is the most frequent inciting organism, although a few have been reported following brucella abortus. No cases caused by the brucella porcine have been disclosed. Recovery is the rule. Mollard and Reinaud⁵ reported an interesting case in which thrombophlebitis of the right leg occurred on the fifteenth day of the disease. Pulmonary embolism occurred almost simultaneously and intestinal hemorrhage followed shortly thereafter. The patient recovered completely. Babbasch⁶ described a case of thrombophlebitis of the femoral vein which existed for a month. Beggi⁷ also discussed a case of thrombophlebitis that occurred in the femoral vein of a young woman at

the onset of the disease. Blood culture showed the brucella melitensis. The patient recovered. Ruggiero and Spezzafumo⁸ reported the only case of bilateral thrombophlebitis of the femoral veins. The one followed the other in two weeks. Recovery was rapid and no sequelae remained. Broussard of Castellane,⁹ (quoted by Ruggiero and Spezzafumo) discussed a case (unpublished) of thrombophlebitis, pulmonary infarct and death. Wohlwill⁹ described careful anatomical findings in a woman aged 67 who died of brucella abortus infection which was complicated by pulmonary embolism. Escarras¹⁰ discussed a typical case with positive agglutination to *Brucella melitensis* in which thrombophlebitis of the femoral vein developed which was followed by a pulmonary embolism to the left lung. This patient recovered in two weeks, six weeks after the onset of the disease. Rizzo and Pierini¹¹ reported a single incident of thrombosis of the left femoral vein which occurred twenty days after the onset of the illness. The agglutination to brucella melitensis was 1-5,000. Recovery was complete.

Rober and Audier¹⁰ reviewed the literature and reported two cases of thrombophlebitis in brucellosis. In both cases the complications occurred several months after the onset of the disease and although phlegmasia alba dolens developed in one instance, both patients recovered from the original disease. The authors stated that the pain of thrombophlebitis in brucellosis is minimal but that edema of the dependent extremities is the prominent sign. The course of this complication is usually benign and, if pulmonary infarcts were present, they were commonly small and therefore not grave.

Bagley, Mueller and Wells¹² reported a case of a man aged 46 years who developed brucella abortus infection. Thrombophlebitis of the left femoral vein developed on the 25th day of the disease. Shortly thereafter pulmonary embolism occurred followed by death in a few hours. At the autopsy an eight centimeter clot plugged the left pulmonary artery and fragments of a clot were present in the right pulmonary artery. In the left femoral vein remains of a thrombus were found but the internal surface of the vein was free of inflammatory changes.

The intermittent or undulating type of fever for which the disease is named is the usual type

of temperature curve, together with a leukopenia and a relative lymphocytosis. However, in our case a septic type of temperature curve and a leukopenia with a relative polymorphonuclear leucocytosis were present, similar to that reported by Gottlieb.⁴

Many therapeutic agents have been used successfully in the past in treatment of brucellosis, thereby lending some question to the value of any treatment that has been used, even though good results have been reported. Spontaneous recovery is well known. Typhoid injections,¹³,¹⁴,¹⁵ hyperpyrexia, foudadin (an antimony compound),¹⁸ arsphenamine,¹⁹ acriflavine,²⁰ short wave diathermy,²¹ x-ray therapy,²² brucellin (specific nucleoprotein),²³ melitine (sera vaccine),²⁴,²⁵ have all had favorable reports in terminating the infection. Over a period of years the estimated average duration of brucellosis is 11.3 weeks, with extremes being ten days to six months and recurrence as long as ten or more years. Angle²⁰ in commenting on vaccines stated "I have had numerous letters stating the vaccine yielded poor results, and that as soon as its administration was stopped the patient got well."

Carpenter et al²⁷ came to the conclusion in 1936 that a successful method for the treatment of brucellosis still awaits development. DeBono²⁸ feels that treatment with sera, vaccines, protein shock, chemotherapy and many less orthodox procedures has been disappointing, and that this disease tends to run its course in spite of treatment.

Sulfanilamide (²⁹ to ³⁷ inclusive) and related compounds have been recently suggested as a successful therapeutic agent in the treatment of undulant fever. Dosages varying from 90 to 1,230 grains have been given. Menefee and Poston³⁸ conducted studies on sulfanilamide in vivo and in vitro. Guinea pigs were inoculated with all three varieties of the brucella organism. Their experimental observations suggest that the bacteriostatic action of the drug allows the normal defense mechanism of the body to cope adequately with the invading bacteria.

On the other hand, Bynum³⁹ reports six cases, (two acute, one subacute and three chronic) of brucellosis due to the brucella abortus which in no way reacted to sulfanilamide in adequate doses. Our own case, tending to show a steady downward course in spite of sulfanilamide ther-

apy, would uphold Bynum's contention, at least to the degree that this drug is not specific in this disease.

This is the first autopsy report of a case of brucellosis which has been treated with sulfanilamide.

SUMMARY

1. A fatal case of brucellosis is presented with autopsy findings.
2. Thrombosis of the left femoral vein, splenic vein and pancreaticoduodenal vein was observed. Pulmonary embolism was the immediate cause of death.
3. 480 grains of sulfanilamide were given but no therapeutic response was noted.
4. The brucella organism was found at autopsy in spite of therapy.
5. A relative polymorphonuclear leucocytosis was present instead of the usual relative lymphocytosis throughout this illness.
6. The fever may not follow the undulating type of curve for which the disease is named.

BIBLIOGRAPHY

1. S. P. Mettier and W. J. Kerr: Hepatitis and Cholecystitis in the Course of Brucella Infection, *Arch. Int. Med.* 54: 702-709, 1934.
2. C. E. De La Chapelle: Vegetative Endocarditis due to Brucella Melitensis with Case Report, *Am. Ht. Journal* 4: 732-739, 1929.
3. G. Luciani: Bruce's Septicemia Ending with Formation of Many Large Abscesses; Case, *Riv. Med.* 40: 97-98, 1932.
4. J. S. Gottlieb: Undulant Fever, Unusual Case with Necropsy, *New Eng. J. Med.* 215: 781-783, 1936.
5. J. Mollard and L. Reinaud: Five Cases of Malta Fever Observed at Lyon, *Lyon Med.* 115: 185, 1910.
6. G. Debbasch: A Case of Phlebitis in Mediterranean Fever, *Tunisie Med.*, 1930.
7. D. Beggi: Phlebitis in Relation to Arthritis due to Brucella Melitensis, *Gior. d. Med. Prot.* 14: 407-417, 1932.
8. F. Ruggiero and C. Spezzafumo: Double Phlebitis during Mediterranean Fever, *Tunisie Med.* 26: 504-506, 1932.
9. F. Wohlwill: On the Pathological Anatomy of Bang's Disease in Man, *Virchows Arch. of Path. Anat.* 286: 141-156, 1932.
10. H. Roger and M. Audier: Melitococcic Phlebitis, *Gaz. Hop.* 108: 589-591, 1935.
11. J. Rizzo and E. A. Pierini: Phlebitis of lower Extremity Complicating Malta Fever, Case, *Semana Med.* 1: 2056-2060, 1934.
12. W. R. Bagley; S. C. Mueller, and A. H. Wells: Acute Brucellosis, Death from Pulmonary Embolism, *J.A.M.A.* 107: 1125-1126, 1936.
13. C. E. Ervin and H. F. Hunt: Diagnosis and Treatment of Undulant Fever, *J.A.M.A.* 109: 1966-1971, 1937.
14. C. E. Ervin; H. F. Hunt, and J. S. Niles, Jr.: Foreign Protein Therapy 11, Treatment of Undulant Fever by Intravenous Injection by Killed Typhoid-Paratyphoid A. and B. bacilli, *Am. J. M. Sc.* 192: 234-241, 1936.
15. H. F. Hunt; C. E. Ervin, and J. S. Niles, Jr.: Foreign Protein Therapy 1, Hemocytologic Change following the Intravenous Injection of Killer Typhoid-Paratyphoid A. and B. Bacilli, *Am. J. M. Sc.* 189: 95-102, 1935.

16. T. E. Puckman and W. C. Popp: Treatment of Brucellosis by Hyperpyrexia, Proc. Staff Meet., Mayo Clinic 11: 506-510, 1936.
17. W. J. Zeiter: The Treatment of Undulant Fever with Artificial Fever Therapy: Report of Case, Cleveland Clinical Quarter 4: 309-311, 1937.
18. G. M. Tanner: Undulant Fever Treated with Fouadin, Lancet 2: 684-685, 1936.
19. H. Eschbach: Malta Fever with Accordion Liver and Spleen, Cure by Arspheamine, Case, Bul. et Mem. Soc. Med. d. hop. de Paris 11: 1446-1448, 1934.
20. A. Jones: Acriflavine (Acridine Dye) Bowel Instillation for Relapsing Fever (*Brucella abortus*), Brit. Med. J. 1: 645, 1935.
21. G. Izar and P. Morretti: Effect of Short Waves on Course of *Brucella Abortus* (*Hominis*) Infection, Klin. Wehnschr. 14: 46-47, 1935.
22. P. S. Paronysm and A. A. Prozorovsky: X-ray Therapy, Klin. Med. 13: 273-277, 1935.
23. I. F. Huddleson and H. W. Johnson: "Brucellin," possible specific for Undulant Fever in Man, Am. J. Trop. Med. 13: 485-504, 1933.
24. T. Zammit and J. E. DeBono: Immunization of Maltese Goat by Means of Cutaneous Vaccination, Lancet 1: 1343-1344, 1930.
25. E. Burnet and E. Conseil: *Brucella Melitensis* and *Brucella Abortus*: Their Pathological Ability for Man and Monkey, Arch. de l'Institute Pasteur de Tunis 18: 21-42, 1929.
26. F. E. Angle: Treatment of Acute and Chronic Brucellosis (Undulant Fever), Personal Observations of 100 Cases over a Period of Seven Years, J.A.M.A. 105: 939-942, 1935.
27. C. M. Carpenter and Ruth A. Boak: Treatment of Human Brucellosis, Medicine 15: 103-127, 1935.
28. J. E. DeBono: Treatment of Undulant Fever, Lancet 1: 374-375, 1935.
29. P. Groues: Several Cases of Brucellosis Treated with Sulfanilamide Alone or Associated with Other Specific Therapeutic Agents of the Disease, Lyon Med. 158: 615-619, 1936.
30. J. H. Lloyd: Sulfonamide-P in *Brucella Abortus* Infection, Brit. Med. J. 1: 145, 1938.
31. L. A. Richardson: Infection with *Brucella Abortus* Treated with Prontosil, Lancet 1: 496, 1938.
32. L. Boethoux, E. Gourdon, and J. Rochedix: Brucellosis Treated by Prontosil, Clinical Improvement, but Persistence and Bacteria in the Blood, Bull. et Mem. Soc. Med. d. hop. de Paris 53: 678, 1937.
33. H. Welch; J. Wentworth and F. Mickle: The Use of Sulfanilamide in the Diagnosis and Treatment of Brucellosis, J.A.M.A. 3: 226, 1938.
34. E. F. Traut and C. E. Logan: Undulant Fever Treated with Sulfanilamide, J.A.M.A. 12: 1092, 1938.
35. H. L. Blumgart: Recovery of a Patient with Undulant Fever Treated with Sulfanilamide, J.A.M.A. 111: 521-523, 1938.
36. H. Ahringsmann: Bang's Disease Treated with Prontosil, Munchen Med. Wehnschr 84: 1778, 1937.
37. W. Berger and J. Schnetz: The Treatment of Bang's Disease with Prontosil, Med. Klin. 33: 594, 1937.
38. E. E. Menefee, Jr., and M. A. Poston: Effects of Sulfanilamide on *Brucella Melitensis*, Variety *Melitensis*, *Abortus* and *Suis*, Journ. of Bacteriology (Baltimore) 37: 269, 1939.
39. W. T. Bynum: Recurrences of Undulant Fever (*Brucellosis*) Following the Administration of Sulfanilamide, J.A.M.A. 9: 835, 1939.

CEREBELLAR SUBDURAL HEMATOMA

Coblentz presents the history of an infant of 2 weeks who recovered after an operation for an encysted subdural hematoma. The author believes that his is the first case to be recognized during life and cured by operation. The hematoma was located over

the right cerebellar hemisphere. Secondary hydrocephalus also was present. Although there was no definite history of trauma, ecchymosis of the upper lids and a moderate occipital caput led the author to suspect slight trauma as the most likely etiologic factor. Prompt disappearance of blood in the lumbar subarachnoid fluid after daily lumbar punctures and continued increased intracranial pressure indicated a coexisting lesion. Subdural hematoma over the cerebellar hemispheres was ruled out by subdural taps. Ventriculography definitely located the lesion in the posterior fossa. Evacuation of the clot through a small trephine opening without drainage effected a cure. At the time of writing, the baby is 3 months old and has made a complete recovery.

VANISHING SMALLPOX

Smallpox has practically disappeared in the United States where laws requiring vaccination for school attendance have been in force for a number of years, according to information just published by the United States Public Health Service.

In the 20-year period from 1900 to 1919 slightly more than three-quarters of a million cases of smallpox were reported in the United States, and in the two succeeding decades the number reported totaled nearly 700,000 cases, 75 percent of which occurred in the decade from 1920 to 1929. During the period from 1900 to 1919, inclusive, 11,435 deaths from this disease were recorded, and from 1920 to 1939 the number fell to 5,337, 90 percent of which occurred from 1920 to 1929.

During the past 40 years there has been a progressive change in the type of smallpox seen in the United States, a change from a large proportion of severe cases with a relatively large number of deaths to a greater percentage of the mild type with very few deaths.

"This change in type of smallpox is one of the reasons for the marked decrease in deaths from the disease observed in recent years," Dr. Dauer stated in his report on the decline of smallpox.

A large proportion of the cases reported in the past decade have occurred in the north central and northwestern sections of the country while in the eastern part of the United States the disease has practically vanished.

Coming Meetings

February — Fulton County — Dr. Robert E. Lee — "Ambulatory Varicosities and Associated Pathology."

February 11 — Winnebago County — University Club, Rockford — 6:30 P. M. — Dr. Herbert E. Schmitz — "Diagnosis & Treatment of Cancer of the Uterus."

February 11 — Effingham County — Benwood Hotel, Effingham — 6:30 P. M. — Dr. Maurice H. Wald — "Hypertension and Its Treatment."

Personals

- February 11 — Kankakee County — Hotel Kankakee, Kankakee — 12:00 Noon — Dr. Robert E. Black — "Heart Disease in Children."
- February 14 — Jersey-Greene Counties — Colonial Hotel, Jerseyville — 6:30 P. M. — Dr. Cecil M. Jack — "Emergencies and Acute Heart Disease."
- February 14 — Will-Grundy County — Louis Joliet Hotel, Joliet — 12:00 Noon — Dr. Elven J. Berkhiser — "Orthopedics."
- February 16 — National Conference on Medical Service — Palmer House — Dr. Robert S. Berghoff — "The Illinois Program in Post Graduate Education."
- February 18 — Knox County — Galesburg Club, Galesburg — 6:30 P. M. — Dr. James H. Hutton — "Recent Progress in Endocrinology."
- February 18 — Rock Island County — St. Anthony's Hospital, Rock Island — 8:00 P. M. — Dr. H. Close Hesseltine — "The Place of the New Chemotherapeutic Drugs Before, During and After Gestation."
- February 20 — Henry County — Parkside Hotel, Kewanee — 6:30 P. M. — Dr. D. E. Markson — "Diagnosis and Treatment of Arthritis." Dr. Clifford J. Barboka — "Medical Management of Gall Bladder Disease."
- February 20 — Stephenson County
- February 20 — Lee County — Hotel Nachusa, Dixon — 6:30 P. M.
- February 20 — LaPorte County Society — LaPorte, Indiana — Dr. Robert S. Berghoff — "Coronary Disease."
- February 21 — Will-Grundy County — Louis Joliet Hotel, Joliet — 12:00 Noon — Dr. Mortimer Diamond — "The Practical Significance of Gross Bleeding."
- February 27 — LaSalle County — Starved Rock Lodge — 6:30 P. M. — Dr. James J. Callahan — "Fractures." Dr. George F. O'Brien — "Pneumonia."
- February 27 — Edgar County — Paris Hospital, Paris, Illinois — 7:00 P. M. — Dr. Bert I. Beverly — "Behavior Problems in the Normal Child."
- March 4 — Williamson County — Herrin Hotel, Herrin, Illinois — 8:00 P. M. — Dr. Sidney Levinson — "Poliomyelitis."
- March 7 — Will-Grundy County — Louis Joliet Hotel, Joliet, Illinois — 12:00 — Dr. Robert E. Cummings — "The Acute Abdomen in Children."
- March 7 — Madison County Medical Society — Granite City, Illinois — 2 P. M. — Dr. Edward Bigg — "Use of Sulfanilamide and Allied Compounds In Infections."
- March 11 — Effingham County — Benwood Hotel, Effingham — 6:30 P. M. — Dr. Harlan English — "What Can Modern Urology Offer?"
- March 12 — Coles-Cumberland County — Mattoon, Illinois — Dr. Wm. J. Morginson — "Dermatology." Dr. James Graham — "Varicose Veins and Ulcers."

Mr. James C. Leary, who has been specializing in science writing on the staff of the Chicago *Daily News* for the past several years, has been named science editor of that paper.

Dr. Oscar F. Schultz, Evanston, was elected president of the Illinois Society of Pathologists at its annual meeting, December 7; Dr. Israel Davidsohn, Chicago, is the secretary.

Dr. William Randolph Lovelace II, Rochester, Minn., discussed "The Use of Oxygen and Helium-Oxygen in Medicine and Surgery" before the Sangamon County Medical Society, Springfield, January 2.

Dr. James E. Graham, Springfield, discussed "Varicose Veins" before the Madison County Medical Society in Edwardsville, January 3.

Dr. Ralph C. Brown, Chicago, discussed "Chronic Ulcerative Colitis" before the Sangamon County Medical Society in Springfield, December 5.

The Henry County Medical Society was addressed in Kewanee recently by Drs. Leo K. Campbell and Channing W. Barrett, Chicago, on "Benefits and Dangers of Reducing" and "Preservation and Restoration of the Pelvic Floor" respectively.

Dr. Stuart W. Harrington, Rochester, Minn., will deliver the annual Mayo Lecture in the library of Northwestern University Medical School, February 10. His subject will be "Diaphragmatic Hernia." This is considered the 1940 lecture.

Dr. Louis N. Katz will give a course in Electrocardiographic Interpretation at Michael Reese Hospital. The course consists of 12 weekly lectures starting February 19.

Dr. Harry A. Olin was invited to address the Will-Grundy County Medical Society on "Primary Carcinoma of the Lung," January 17.

Dr. Eugene Cary gave a paper on "Management of Prolonged Labor" before the Rock Island County Medical Society, January 21st.

Dr. H. Close Hesseltine was invited to address the Saline County Medical Society, January 24, on "Diagnostic Pitfalls of Pynria and Fever in the Obstretrical Patient."

Dr. Frederick H. Falls was invited to give a talk on "Local Anesthesia in Obstetrics" before the Edgar County Medical Society on January

24th.

Dr. John R. Neal gave a paper on "Medical Legislation" before the Will-Grundy County Medical Society, January 24.

Dr. Grover C. Penberthy, Detroit, addressed the Jackson Park Branch of the Chicago Medical Society, December 19, on "Treatment of Burns."

Dr. Walter C. Alvarez, Rochester, Minn., discussed "Abdominal Pain" before the Calumet Branch, December 20.

Dr. George K. Fenn was invited to talk on "Peripheral Vascular Diseases, Diagnosis and Treatment" at the January 28th meeting of the Iroquois County Medical Society.

Dr. G. Henry Mundt was invited to give a talk on "Ophthalmology in General Practice" before the Macoupin County Medical Society on January 28.

Dr. William Harcourt Browne gave a paper on "Prolonged Labor" before the Staff of St. Francis Hospital, Peoria, on January 14.

Dr. Adrien Verbrugghen was invited to give a paper on "Neurology In General Practice" before the Bureau County Medical Society on January 14.

Dr. B. Barker Beeson gave a paper on "Treatment of Syphilis in the Adult" before the Lake County Medical Society on January 14.

Dr. Francis E. Sencar addressed the Effingham County Medical Society on "Treatment of Common Skin Disorders," January 14.

Dr. Franklin J. Corper gave a paper on "Urinary Tract Infections and Nephritis" before the Alexander County Medical Society on January 14.

Dr. Charles Newberger was scheduled to talk on "Forceps Delivery" before the Kankakee County Medical Society on January 14.

Dr. Edward Lyman Cornell was invited to talk on "The Post Due Patient" before the DuPage County Medical Society on January 15.

Dr. Frederick W. Slobe was invited to address the Stephenson County Medical Society on "Low Back Injuries" January 16th.

Dr. Jerome R. Head gave a talk on "Lung Abscess" before the Vermilion County Medical Society at Danville on January 7.

Dr. John S. Coulter gave a paper on "Uses and Abuses of Physical Therapy" before the Will-Grundy County Medical Society at Joliet on January 10.

Dr. Harry B. Mock addressed Will-Grundy County Medical Society on "Skull Fractures" at Joliet, January 3.

Dr. Fred Meixner of Peoria spoke at a dinner meeting of Physicians of Schuyler and Cass Counties at Beardstown, Ill. Hospital Jan. 8 on the topic "Influenza and Respiration Infections" at the request of the Educational Committee, Illinois State Medical Society.

At the annual meeting of the Chicago Dermatological Society held January 15th the following officers were elected: President, Leonard F. Weber; Vice-President, Marcus R. Caro; Secretary-Treasurer, Michael H. Ebert.

At the annual banquet of the staff of the Edgewater Hospital, held at the Hotel Sovereign, Chicago, January 18, 1941, tribute was paid to Dr. Arthur E. Gammage upon the announcement of his retirement from active practice as of April 1, 1941, by appointment as Emeritus Consultant, Departments of Gynecology and Obstetrics. Dr. Gammage has been in active practice in Chicago for 35 years. He organized and has contributed largely to the success of the obstetrical department of the hospital ever since its organization. He moves to his country home at Rio, Illinois, Knox County, where his family now resides, and where he has spent considerable time and effort in the past five years developing his stock farm.

On January 3rd, Doctor Edmund Jacobson delivered an address before the Engineering Department of the General Electric Company entitled "Electrical Measurements of Nervous States and of Mental Operations in Man." A second address was given over the Radio Broadcasting Station of that corporation on the same day.

News Notes

—A division of social hygiene has been created in the state department of public health, the principal function of which will be to control the venereal diseases with especial emphasis on the eradication of syphilis. Dr. Herman M. Soloway, Chicago, has been made chief of the division.

—Edward A. Doisy, Ph.D., professor and director of the department of bio-chemistry, St. Louis University School of Medicine, St. Louis, re-

cently presented the first lecture under the Julius Stieglitz Memorial Lectureship at the University of Chicago. His subject was "Recent Developments in the Field of Vitamin K." The lectureship was established through joint effort of the Chicago section of the American Chemical Society and alumni of the department of chemistry of the University of Chicago.

—Dr. Dallas B. Phemister, professor of surgery and chairman of the department, University of Chicago School of Medicine, has been designated the first holder of the newly created Thomas D. Jones professorship. The new chair was recently established to honor the late Thomas Davies Jones, pioneer Chicago attorney and industrialist, who died in 1930. Mr. Jones had been a major benefactor of the University of Chicago, its medical school and the Frank Billings Medical Clinic. Born in Carbondale, Ill., in 1882, Dr. Phemister received his degree in medicine in 1904 from Rush Medical College. He has been a member of the staff of the University of Chicago since 1925 and is a past president of the American Surgical Association and of the Society of Clinical Surgery.

—The winter meeting of the Society of Illinois Bacteriologists held at the Board of Trade Building, Chicago, January 31. Dinner will be followed by a program with four speakers, as follows:

Mr. H. W. Cromwell, Abbott Laboratories, North Chicago, Experiences with Microbiologic Assay of Riboflavin (Vitamin G).

Dr. Carl A. Dragstedt, Northwestern University Medical School, Chicago, Some Recent Studies in Anaphylaxis.

John C. Garey, Ph. D., University of Illinois, Urbana, The Bacteriology of Brick Cheese.

Dr. Wayne W. Fox, Northwestern University, Evanston, Laboratory Aids in Diagnosis and Treatment of Pneumonia.

—The middle section meeting of the American Laryngological, Rhinological and Otological Society in a joint session with the Chicago Laryngological and Otological Society addressed at the Drake Hotel, January 27, by the following:

Dr. Harry C. Rosenberger, Cleveland, Herpetiform Inflammation of the Geniculate Ganglion with Facial Paralysis: A Subjective Experience.

Dr. Samuel Iglauer, Cincinnati, Use of Preserved Human Cartilage in Reconstructive Facial Surgery.

Melvin H. Knisely, Ph.D., Chicago, Dr. Warren K. Stratman-Thomas and Theodore S. Eliot, Ph.D., Memphis, Microscopic Observations of the Changes in the Blood and Circulation in Living Animals.

Dr. William E. Grove, Milwaukee, An Evaluation of Ménière's Syndrome.

Dr. James H. Maxwell, Ann Arbor, Mich., Some Experiences with Sinusitis in the Swimmer.

Dr. Harold I. Lillie, Rochester, Minn., Suppurative Otitis Media, Acute Suppurative Labyrinthitis and Meningitis in a Pregnant Woman Near Term: Cesarean Section, Labyrinthectomy and Recovery.

Stacy R. Guild, Ph.D., Baltimore, War Deafness and its Prevention.

Capt. Cole D. Pittman, Chanute Field, Ill., Relation of High Altitude Flying and Rapid Changes of Atmospheric Pressure to Otolaryngology and Its Effect on the Middle Ear and Accessory Sinuses in Military Aviators.

Dr. Paul H. Holinger, Chicago, Esophageal Perforations and Complications.

Dr. John Mackenzie Brown, Los Angeles, president, was introduced at this meeting.

—After serving three years beyond the retirement age, Dr. Joseph Brennemann retired from active service as Chief of Staff of the Children's Memorial Hospital on January 1st. He was nationally known as the author of numerous scientific articles in his chosen specialty and as author of the "Practice of Pediatrics." He is a past president of the American Pediatric Society. His seasoned and genial leadership influenced all those who had any contact with him during the twenty years he served the hospital.

Dr. C. Anderson Aldrich, a member of the staff for twenty years, succeeds him. Dr. Aldrich has been actively practising pediatrics on the North Shore for twenty-five years since his graduation from Northwestern University School of Medicine. He is the author of three books including "Babies Are Human Beings" which won the Parents Magazine award.

Deaths

JAY HARVEY BACON, Peoria, Ill.; Johns Hopkins University School of Medicine, Baltimore, 1940; a Fellow, A.M.A., member of the Clinical Orthopedic Society; fellow of the American College of Surgeons; served during the World War; on the staff of the Methodist Hospital; formerly on the staff of the Proctor Hospital; aged 63; died, November 18, of arteriosclerotic heart disease.

ALVIN GUSTAV BERGER, Chicago; Eclectic Medical College, Cincinnati, 1916; a Fellow, A.M.A., on the staff of the Grant Hospital; aged 48; died, November 9.

CLARK WILDER HAWLEY, Chicago; Rush Medical College, Chicago, 1885; a Fellow A.M.A., an Affiliate Fellow of the American Medical Association; member of the American Academy of Ophthalmology and Otolaryngology; aged 85; died, November 1, in La Grange, Ill.

SIEGFRIED JACKSON, Chicago; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1900; member of the Illinois State Medical Society; on the staff of the Columbus Hospital; aged 65; died, November 6.

FRANCIS KIRSCH, East St. Louis, Ill.; Homeopathic Medical College of Missouri, St. Louis, 1890; aged 78; died, Nov. 5, 1940, in St. Mary's Hospital of cerebral hemorrhage.

KENNETH LINDSAY HOOD, Belvidere, Ill.; St. Louis University School of Medicine, 1926, a Fellow, A.M.A., president of the Boone County Medical Society; aged 45; died Nov. 25, 1940, of acute nephritis.

PAUL NICHOLAS LEECH, Ph.D., Director of the Division of Foods, Drugs and Physical Therapy in the headquarters office of the American Medical Association, died suddenly January 14 following a hemorrhage of the brain. He had suffered for some time with arterial hypertension. Dr. Leech was born in Oxford, Ohio, Aug. 12, 1889 and obtained his A.B. degree from Miami University, Oxford, Ohio, in 1910 and received the degree of master of science from the University of Chicago in 1911 and the Ph.D. in 1913. He also held the honorary degree of master of pharmacy from the Philadelphia College of Pharmacy. From 1911 to 1913 he was assistant in the Department of Chemistry at the University of Chicago, working with Prof. Julius Stieglitz. In 1913 he joined the staff of the American Medical Association as a chemist and in 1923 became director of the chemical laboratory, working under Prof. W. A. Puckner, who was the Secretary of the Council on Pharmacy and Chemistry. Following the death of Professor Puckner in 1932 Dr. Leech became Secretary of the Council on Pharmacy and Chemistry, and when the Board of Trustees created the Division of Foods, Drugs and Physical Therapy he was appointed director.

In 1918 Dr. Leech served as a lieutenant in the Sanitary Corps of the United States Army. He was a member of the American Chemical Society, a coun-

cilor from 1922 to 1936 and a director from 1928 to 1934. He also served as chairman of the Chicago section of the American Chemical Society in 1926. He was a member of the Chicago Chemists Club and trustee from 1925 to 1932. His contributions to medicine were recognized by associate fellowship in the American Medical Association and membership in the Institute of Medicine of Chicago. He was a member of Sigma Xi and an honorary member of Phi Beta Kappa. During his university career Dr. Leech contributed to research in the fields of formic acid, molecular rearrangements, medicinal chemistry and drug development. In his position as Secretary of the Council on Pharmacy and Chemistry, he served as an associate editor of many publications dealing with drugs, vitamins, glandular products and pharmacy. On several occasions he represented the American Medical Association in the United States Pharmacopeial Convention. For more than a quarter of a century Dr. Leech rendered devoted service to the physicians of this country and earned for himself a nationwide reputation for integrity, scientific judgment and the highest ideals in the advancement of pharmacy and chemistry.

HOMER BENJAMIN MILLHON, Owaneco, Ill.; Northwestern University Medical School, Chicago, 1903; a Fellow, A.M.A.; for many years on the staff of St. Vincent's Hospital, Taylorville; aged 70; died, Nov. 2, 1940.

WILLIAM JOHN MORRISON, Chicago; Chicago Medical School, 1916; aged 59; died, Nov. 13, 1940, of acute myocarditis.

ROY LA FAYETTE OWEN, Chicago; Rush Medical College, Chicago, 1901; aged 64; died, Nov. 25, 1940, in the Illinois Masonic Hospital of prostatic hypertrophy and pyelonephritis.

DEAN LOLLER RIDER, Riverside, Ill.; Rush Medical College, Chicago, 1923; a Fellow, A.M.A.; clinical assistant in surgery at his alma mater from 1923 to 1928 and clinical associate from 1928 to 1937; formerly on the staffs of the Provident and Cook County hospitals; aged 42; died, Nov. 15, 1940.

ADOLPH OTTO SISTLER, Hoopeston, Ill.; University of Louisville (Ky.) Medical Department, 1910; aged 57; died in November 1940 of myocarditis.

BEULAH MARIE SMITH-GRUHNER, Chicago; University of Illinois College of Medicine, Chicago, 1925; aged 53; died, Oct. 6, 1940, in the Albert Merritt Billings Hospital of a cerebrovascular accident.

KARL L. THORSGAARD, Chicago; Rush Medical College, Chicago, 1900; a Fellow, A.M.A.; served in various capacities on the staffs of the Augustana Hospital and the American Hospital; aged 65; died, Nov. 24, 1940, of coronary thrombosis.

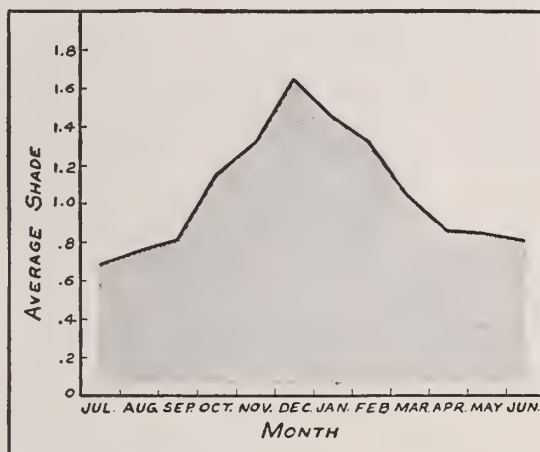
IRA RAYMOND WILLITS, Chicago; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1905; a Fellow, A.M.A.; aged 58; died, Dec. 3, 1940, in St. Mary's Hospital, Galesburg, Ill., of hypertensive heart disease and chronic nephritis.

WEATHER FORECAST— HEAVY SMOKEFALL

SMOKE exerts a definite influence on the weather at this season by reducing the amount of sunlight. Beginning in September there is a steady rise in atmospheric pollution until in December it becomes double that of midsummer, according to a recent report of a two-year study made by the U. S. Public Health Service in ten of the largest American cities, representing a population of millions. One of the most surprising findings was that there is no decrease in the dust content of the air either during or after a rain.

Winter Sunlight an Unreliable Antiricketic

Atmospheric pollution is but one of many forces militating against the therapeutic effects of ultraviolet rays in winter. Others, to name only a few, are cloudiness, precipitation, and clothing. In winter, moreover, it is often impracticable to give sunbaths to infants during the very time they are most susceptible to rickets—the first six months of life.



Average atmospheric pollution in 10 large American cities, 1931-1933. In many smaller communities, even worse conditions may prevail under any of the following combinations: (1) soft coal, (2) low inland wind velocity, (3) concentrated manufacturing activity, (4) no zoning regulations, (5) no smoke abatement ordinances.

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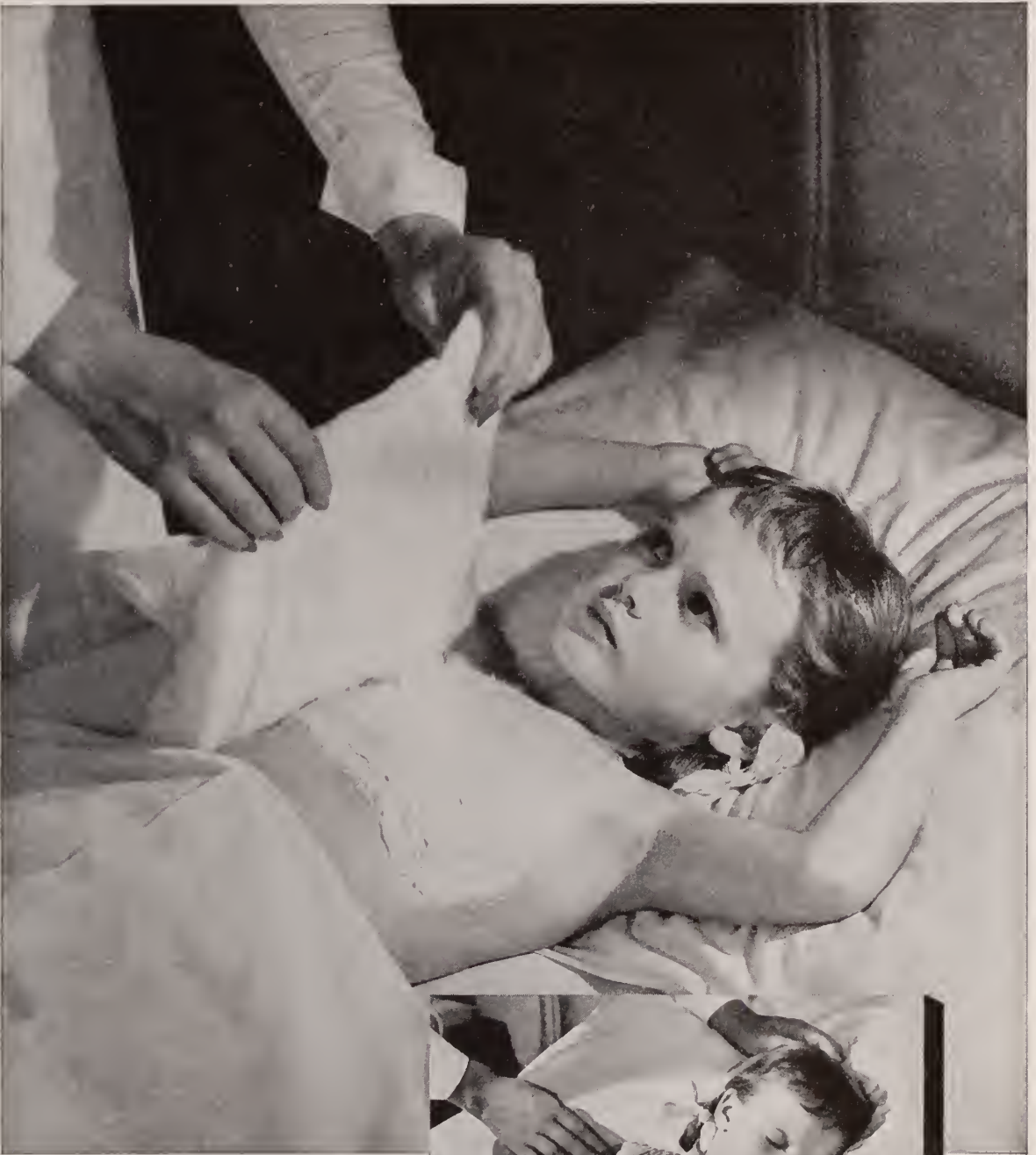
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COUNTY SOCIETIES

This list is corrected in accordance with the best information obtainable at the date of going to press. County Secretaries are requested to notify The Journal of any changes or errors.

County	President	Secretary
Adams	S. R. Hoover, Quincy	Walter Stevenson, Quincy.
Alexander	J. K. Rosson, Tamm, Ill.	J. S. Johnson, Cairo.
Bond	D. T. Brown, Mulberry Grove	Katherine B. Luzader, Greenville.
Boone	E. F. Dettmann, Belvidere	Wesley B. Oliver, Belvidere.
Bureau	Clifford Hartman, Granville	C. R. Bates, Ladd.
Calhoun	(See Pike-Calhoun)	
Carroll	Mac Harper, Seyfarth, Lanark, Ill.	J. C. Garland, Mt. Carroll.
Cass	C. E. Soule, Beardstown	R. A. Spencer, Beardstown.
Champaign	G. D. Gernon, Champaign	John A. Siegling, Urbana
Christian	B. F. Zobrist, Assumption	R. M. Seaton, Morrisville.
Clark	W. M. Rogers, Martinsville	H. C. Houser, Westfield.
Clay	J. P. Shore, Sailor Springs	M. H. Parker, Flora.
Clinton	M. A. Bateman, Carlyle	J. O. Roane, Carlyle.
Coles-Cumberland	John J. Belting, Charleston	Raymond Cole, Mattoon
Cook	Frank F. Maple, Chicago	H. Prather Saunders, Chicago.
Crawford	J. W. Carlisle, Robinson	J. W. Long, Robinson.
De Kalb	Clifford E. Smith, De Kalb	Carl E. Clark, Sycamore.
De Witt	F. M. Blome, Kenney	Wm. R. Marshall, Clinton.
Douglas	Virgil Fishel, Arcola	J. O. Cletcher, Tuscola.
Du Page	Kenneth Hiatt, Glen Ellyn	A. R. Rikli, Naperville.
Edgar	F. J. James, Paris	Paul E. Fleener, Paris.
Edwards	Andrew Krejac, West Salem	A. J. Boston, Albion.
Effingham	W. J. Gillespie, Effingham	A. E. Goebel, Effingham.
Fayette	A. M. Fromm, Ramsey, Ill.	E. A. Kuehn, Vandalia.
Ford	S. B. Furby, Paxton	M. D. E. Peterson, Paxton.
Franklin	Geo. Burkhart, Benton	Marion A. Turner, Christopher.
Fulton	J. P. Graham, Avon	O. M. Wood, Ipava.
Gallatin	J. C. Murphy, Ridgway	E. W. Burroughs, Ridgway.
Greene	R. W. Piper, White Hall	W. H. Garrison, White Hall.
Hancock	J. D. Trotter, Carthage	Blair Kelly, Ferris.
Hardin	L. D. Dusch, Golconda	H. H. Watson, Elizabethtown.
Henderson	C. J. Eads, Oquawka	Elmer T. Swann, Oquawka.
Henry	C. P. White, Kewanee	P. J. McDermott, Kewanee.
Iroquois	N. O. Hungness, Sheldon	L. E. Messman, Onarga.
Jackson	Wm. F. Felts, Carbondale	Edward K. Ellis, Murphysboro.
Jasper	K. L. Wattleworth, Newton	C. O. Absher, Newton.
Jefferson Hamilton	R. E. Crum, Mt. Vernon	Andy Hall, Mt. Vernon.
Jersey	H. R. Gledhill, Jerseyville	R. G. Mindrup, Jerseyville.
Jo Daviess	G. C. McGinnis, Warren	R. E. Logan, Galena.
Johnson	Wm. Thompson, Cypress	E. A. Veach, Vienna.
Kane	Albert G. Martin, Aurora	K. M. Manougian, Elgin.
Kankakee	R. L. Benjamin, St. Anne	Robert E. Bedard, Kankakee.
Kendall	No Society.	
Knox	G. C. Klein, Galesburg	Wm. F. Maley, Galesburg.
Lake	R. M. Ekstrand, Waukegan	Willard C. Clark, Waukegan
La Salle	L. V. Urbanowsky, La Salle	Roswell T. Pettit, Ottawa.
Lawrence	R. F. Snider, St. Francisville	Ralph B. Armitage, Lawrenceville.
Lee	Edwin F. Baker, Ashland	Robt. Le Sage, Dixon.
Livingston	O. P. Hamilton, Forrest	O. H. Law, Pontiac.
Logan	N. A. Balding, Lincoln	Lee N. Hamm, Lincoln.
McDonough	J. H. Hermetet, Macomb	Wm. M. Hartman, Macomb.
McHenry	A. S. Romberger, Woodstock	M. M. Dickey, Richmond.
McLean	Gerald M. Cline, Bloomington	H. P. Sloan, Bloomington.
Macon	Walter D. Murfin, Decatur	F. R. Martin, Decatur.
Macoupin	R. E. Bley, Bunker Hill	J. J. Grandone, Gillespie.
Madison	D. D. Monroe, Alton	E. F. Moore, Collinsville.
Marion	H. D. Gillette, Centralia	J. H. Stephens, Centralia.
Mason	Nelson Wright, Jr., Manito	D. V. Auld, Havana.
Massac	V. O. Decker, Metropolis	J. H. Gann, Brookport.
Menard	Irving Newcomer, Petersburg	T. V. Plews, Petersburg
Mercer	W. A. Miller, Joy, Aledo	V. A. McClanahan, Aledo.
Monroe	E. T. Lark, Columbia	J. A. Werth, Waterloo.
Montgomery	L. G. Allen, Litchfield	H. F. Bennett, Litchfield.
Morgan	Harold Bowman, Jacksonville	Friedrich Engelbach, Jacksonville.

(Continued on page 25)

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Moultrie	S. H. Ambrose, Lovington	W. B. Kilton, Sullivan.
Ogle	G. S. Henderson, Holcomb	A. R. Bogue, Rochelle.
Peoria	Emil Z. Levitin, Peoria	C. W. Magaret, Peoria.
Perry	C. F. Kelly, Du Quoin	H. I. Stevens, Tamaroa.
Piatt	W. N. Sievers, White Heath	J. M. Holmes, Monticello.
Pike	J. H. Rutledge, Nebr.	P. V. Dilts, Pittsfield.
Pope	S. P. Ward, Golconda	L. S. Barger, Golconda.
Pulaski	Oscar Karraker, Olmsted	Otis T. Hudson, Mounds.
Randolph	C. O. Boynton, Sparta	W. W. Fullerton, Steeleville.
Richland	Ralph King, Olney	Paul C. Weber, Olney.
Rock Island	Paul P. Youngberg, Moline	L. A. Dondanville, Moline.
St. Clair	Wm. L. Hanson, East St. Louis	R. F. Sondag, East St. Louis.
Saline	B. E. Montgomery, Harrisburg	W. J. Blackard, Jr., Harrisburg.
Sangamon	Robt. Flentje, Springfield	Frank M. Davis, Springfield.
Schuyler	A. W. Ball, Rushville	H. O. Mudson, Rushville.
Scott	No Society.	
Shelby	E. M. Montgomery, Cowden	C. H. Hulick, Shelbyville.
Stephenson	Robt. J. Hyslop, Freeport	Edward M. Burns, Freeport.
Tazewell	L. A. Balcke, Pekin	C. A. Nelson, Pekin.
Union	W. J. Benner, Anna	Berry V. Rife, Anna.
Vermilion	A. O. Sistler, Hoopeston	A. R. Brandenberger, Danville.
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BOOK REVIEW

FRACTURES AND DISLOCATIONS FOR PRACTITIONERS. By Edwin O. Geckeler, M.D. Second Edition. Baltimore. The Williams & Wilkins Company. 1940. Price \$4.00.

This work is complete yet simplified guide to the management of bone and joint injuries. Show — in 267 figures, including 131 x-Ray pictures — and clearly describes in all necessary detail a reliable and time-saving treatment for every common type of fracture and dislocation. Skeletal traction and treatment of compound fracture and dislocation. Skeletal traction and treatment of compound fractures are more fully considered in this new edition. The book has proved to be an ideal preparation for the handling of automobile and other accident cases.

METHODS OF TREATMENT. By Logan Clendening, M.D. and Edward H. Hashinger, M.D. with chapters on special subjects. Seventh Edition. St. Louis. The C. V. Mosby Company. 1941. Price \$10.00.

This book is intended to furnish an outline for all the methods of treatment in internal medicine. In this work all therapeutic procedure is brought together within the compass of one volume. The revision of this edition has been made to conform to the eleventh edition of the United States Pharmacopoeia. The work brings the subject up-to-date and should be in the library of every practitioner.

HOW TO RAISE A HEALTHY BABY. Complete information from birth to the sixth year. By L. J. Halpern, M.D. New York. Prentice-Hall, Inc., 1940. Price \$1.95.

In this work the author makes available the latest, up-to-date information on all daily problems that arise pertaining to the care, training, diet, growth, and development of infants and young children.

There is an authoritative chapter on the common

contagious diseases at the end of the book is a diary in which a record of important events in the early life of the child may be kept for future reference.

A TEXTBOOK OF CLINICAL PATHOLOGY. Edited by Roy R. Kracke and Francis P. Parker. Second Edition. Baltimore. The Williams & Wilkins Company. 1940. Price \$6.00.

The first edition of this book appeared as late as 1938 and it has already become necessary to subject it to a thorough revision. Fourteen experienced teachers present the present edition in an extensively revised and enlarged form. New material throughout and a number of added chapters and sections render the book fully up-to-date and more comprehensive than before.

All laboratory findings are clearly interpreted by the contributors who constantly keep the diagnostic problems of daily practice in mind.

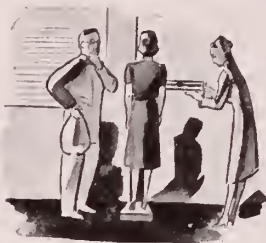
THE DOCTOR AND THE DIFFICULT CHILD. William Moodie, M.D. New York. The Commonwealth Fund. 1940. Price \$1.50.

Dr. Moodie, English psychiatrist long experienced in treating children, presents this book which shows the sympathetic insight of its author into the viewpoint of the parent, both the one who exaggerates and the one who underestimates the imports of his child's behavior.

The book is a contribution to the practice of child guidance, which is becoming more exact in its knowledge, sure in its methods and successful in its results.

SURGICAL ANATOMY OF THE HEAD AND NECK. By John Finch Barnhill, M.D. and William J. Mellinger, M.D. Introduction by Paul S. McKibben, Second Edition. Rearranged and revised with many new illustrations several in colors. Baltimore. Williams & Wilkins Company. 1940. Price \$15.00.

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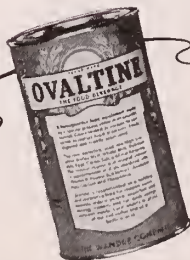
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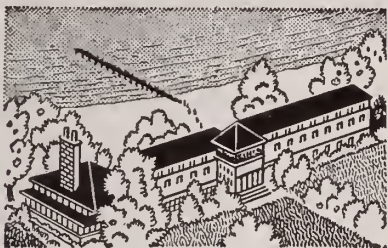
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FOREIGN BODIES LEFT IN THE ABDOMEN. The Surgical Problems Cases, Treatment, Prevention. The Legal Problems Cases, Decisions, Responsibilities. By Harry Sturgeon Crossen, M.D. and David Frederic Crossen, LL.B. With 212 illustrations including four color plates. The C. V. Mosby Company. 1940. Price \$10.00.

This book is a combination of two distinct parts — one treating the subject from the medical standpoint, and the other from the legal standpoint. Though the combination is necessary for a full consideration of the subject, each author is alone responsible for his part of the book. As the discussions in the two parts

are based on much the same material, there is necessarily some repetition. Much material from writers on various phases of the subject and from the publishers of those writings and illustrations has been taken from other authors. Care has been exercised throughout to give full credit for text and illustrations used.

DIAGNOSIS AND TREATMENT OF ARTHRITIS AND ALLIED DISORDERS? By H. M. Margolis, M. D. with 140 illustrations. New York—London. Paul B. Hoeber, Inc. 1941. Price \$7.50.

This work is intended primarily for the general practitioner, the medical student, and practitioner of tomorrow.

A practical approach to the subject has been maintained throughout with an aim towards simplicity both in the organization and presentation of the subject matter.

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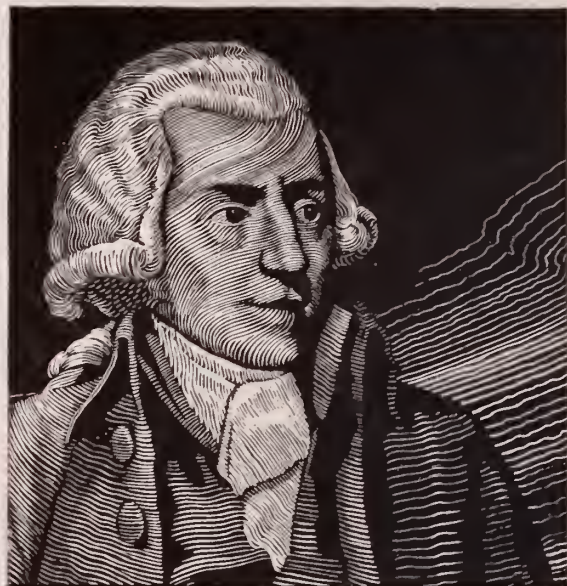
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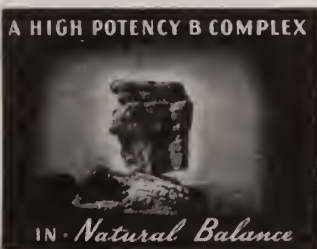
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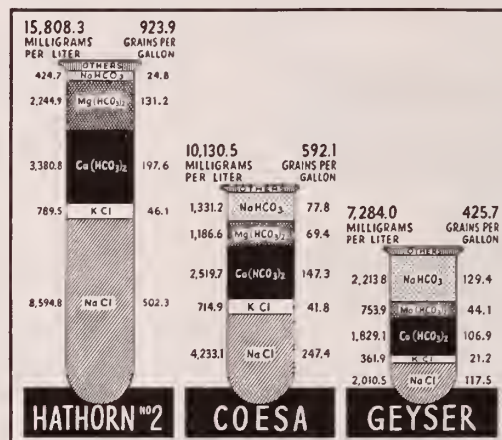
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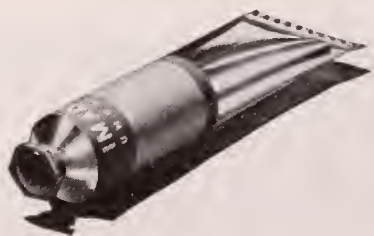
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Book Review

A SURGEON EXPLAINS TO THE LAYMAN. By M. Benmosche, M. D. New York. Simon and Schuster. 1940. Price \$3.00.

This book does the fascinating job of translating surgical knowledge and procedure into language every layman can understand. It contains those particular facts about the most frequent operations that countless patients have wished their doctors had the time to sit down and explain — and that countless doctors have wished were available in a book, so that patients might be referred to it.

It has been written to help dispel, through greater understanding, that unnecessary and heartbreaking fear which surrounds the word "operation." The brilliant and dramatic result takes the reader into the very mind of the surgeon grappling with his problems, tells exactly what he does and how and why he does it.

IN SEARCH OF COMPLICATIONS. An Autobiography by Eugene de Savitsch, M. D. Foreword by Arthur Krock. New York, Simon and Schuster. 1940. Price \$3.00.

This is the life story of a doctor who is acutely aware of his own funny bone and is inclined to be genially acid about poor unfortunates who don't have funny bones.

Eugene de Savitsch has had an exciting life. There is not a dull moment in "Search Of Complications." Any one would find it difficult to lay it down once he had opened it.

The control of tuberculosis in the army must be given serious thought. Elimination of the potentially tuberculous recruit by x-ray examination at the time of induction into the army is not enough. Continued systematic prevention of tuberculosis in the army is the real task to be faced. Edgar Mayer, M.D., Modern Medicine, December, 1940.

Fulminating pulmonary tuberculosis, such as military tuberculosis is rather infrequent among persons in better circumstances, while fibroid phthisis is more likely to occur among persons under better economic surroundings. Extremely acute manifestations of rheumatic infections are relatively infrequent among the better-to-do, while the more chronic type of fibrosing mitral stenosis is more likely to occur. In both tuberculosis and rheumatic fever these differences are conditioned by better treatment, ability to obtain more rest, less arduous occupations and many other considerations. O. F. Hedley, Pub. Health Rep. Oct. 11, 1940.

Nothing is more important at the present time than to continue and to intensify the campaign against tuberculosis and against syphilis, and I hope that no one will permit his attention to be swayed from the objectives we have in mind, because the fight against these diseases is more important at a time of crisis as a measure of national defense than it is in normal times. Frank C. Boudreau, M.D.

As long as reliable mortality statistics for tuberculosis have been known, young women have always been more prone to die of tuberculosis than have their young brothers or older sisters. While the general death rate from tuberculosis has steadily fallen, the death rate among young women has also decreased, but at a slower rate. The fact remains that tuberculosis is prevalent enough, particularly among young women, to warrant, in the opinion of many authorities, a tuberculin test on all pregnant women. Treatment of tuberculosis has advanced so rapidly in recent years, that with early recognition of the condition in pregnancy, it is possible in many cases to bring the baby through safely with no danger to the mother. National Council for Mothers and Babies.

In a ten-year tuberculin-testing program in rural and town schools in four counties in Minnesota the percentage of reactors has fallen from 14.1% to 6.75%. The decrease is attributed to a careful follow-up of all positive reactors, with an intensive search for the source of the infection. Contact with open cases of tuberculosis was broken by hospitalization of the case or placing the children in a home free from tuberculosis. All teachers and school personnel were included in the plan.

How long ago it seems. In 1859 Mr. Richard C. Downing, Superintendent of Sanitary Inspection of New York City said, "I consider it very unjust to give the health inspector of the City of New York power to quarantine a house where there is smallpox." Better Times, Dec. 13, 1940.

Family life in contact with a case of tuberculosis greatly increases risk of the infection spreading, especially in the age group when health is of maximum economic and social importance. Geo. H. Ramsay, M.D., et al, Health News, Oct. 21, 1940.

It has been estimated that 5 to 8 per cent. of all pelvic inflammatory disease is due to tuberculous involvement of the organs. This should not be overlooked in differential diagnosis. A. H. Lahmann, M.D. and S. F. Schwartz, M.D., Amer. Jour. Obst. and Gyn., Sept. 1940.

Two contrary laws seem to be wrestling with each other nowadays; the one a law of blood and of death ever imagining new means of destruction and forcing nations to be constantly ready for the battlefield — the other, a law of peace, work and health, ever evolving new means of delivering man from the scourges which beset him. The one seeks violent conquests; the other, the relief of humanity. The latter places one human life above any victory; while the former would sacrifice hundreds of thousands of lives to the ambition of one. The law of which we are the instruments seeks, even in the midst of carnage, to cure the sanguinary ills of the law of war; the treatment inspired by our antiseptic methods may preserve thousands of soldiers. Which of these two laws will ultimately prevail, God alone knows. But we may assert that science will have tried, by obeying the law of humanity, to extend the frontiers of life. Louis Pasteur

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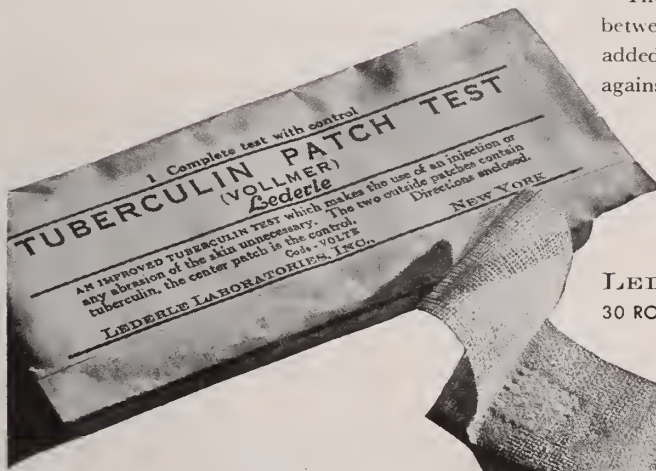
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PACKAGES:

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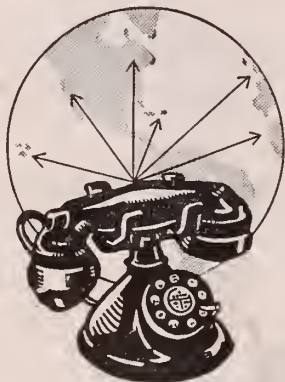
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JOURNAL OF MEDICINE
MAR 19 1941

Illinois Medical Journal

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MARCH, 1941

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ANNUAL MEETING ILLINOIS STATE MEDICAL SOCIETY, CHICAGO, MAY 20, 21, 22, 1941

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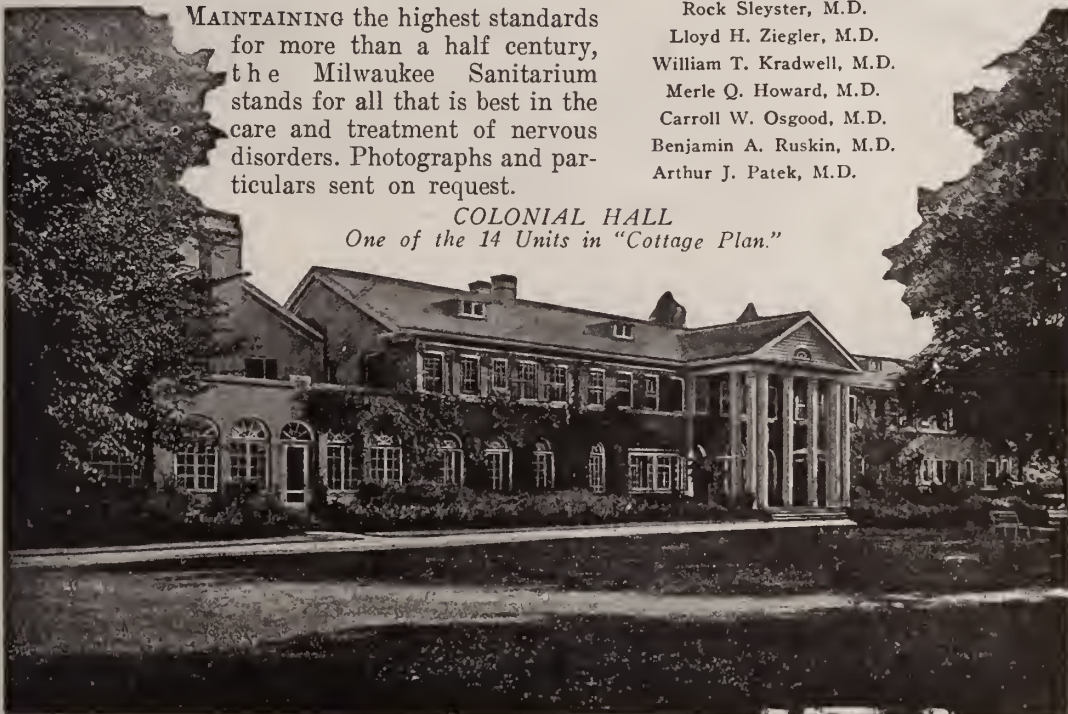
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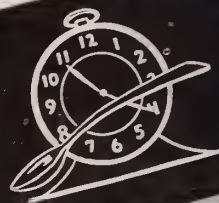
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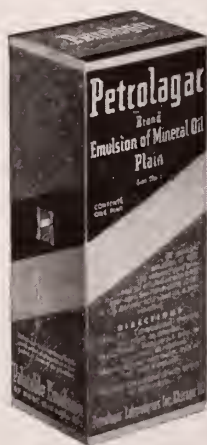
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● "This new method of preserving . . . proceeds from the simple principle of applying heat . . . in a due degree to the several substances after having deprived them as much as possible of all contact with the external air."(1)

In this concise manner, Nicholas Appert, discoverer of canning, summed up the salient features of his procedure. Appert's method consisted of sealing prepared foods in wide mouth glass bottles with corks and processing the sealed bottles in a bath of boiling water. The first English edition of his book (1) describes Appert's procedures for some fifty products. While the times of his heat processes varied between products, the temperatures of the processes were uniformly that of boiling water.

After the spread of commercial canning to America, early canners soon found that spoilage frequently resulted when Appert's heat processes were employed. Increasing the time of process at 212°F. alleviated but did not entirely control this difficulty. As recently described (2a), attempts were next made to increase the temperature of process, either by the addition of soluble salts to raise the boiling point of water, or by the use of the autoclave which permitted processing under steam pressure at temperatures above 212°F. About 1874, an improved type of autoclave was invented in the United States and gradually came into general use for certain types of products. While this device reduced spoilage considerably, losses still occasionally resulted due to inadequate heat processing.

Between 1895 and 1900, the new-born science of bacteriology was first applied to

the canning industry. These early discoveries are well described elsewhere (2, 3); important among the findings was the fact that for products most favorable for growth of spoilage organisms, there is a minimum time of process which must be applied at a given temperature for a given can size, if preservation of the food is to be assured. The need for standardization of heat processes was thus clearly indicated.

During the past twenty years, the heat processing of canned foods has truly been placed on a sound scientific basis (4, 2b). The natural acidity of the food now determines the process temperature to be used. Foods with pH values below 4.5 may be safely processed at 212°F. or below; the "non-acid" foods with pH values above 4.5 require elevated process temperatures, 240°F. being the temperature most widely employed.

Today, adequate heat processes for non-acid foods are mathematically calculated using data which take into consideration all factors influencing the sterilizing value of a process. Processes thus calculated are thoroughly tested before being incorporated into bulletins of recommended processes which modern canners follow (5).

This establishment of adequate heat processes—particularly for the non-acid foods—is one of the greatest advances in canning technology made in the history of the industry. Today, it is apparent that the success of many of Appert's heat processes was due to fortuitous circumstances. The modern consumer, however, has the assurance that commercially canned foods are among the most wholesome foods reaching his table.

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REFERENCES

- | | |
|---|---|
| (1) 1811. Art of Preserving, N. Appert. Black, Parry and Kingsbury, London. | tions in Public Health 1, 15. |
| (2a) 1938. C. O. Ball. Food Research, 3, 13. | (3) 1937. Appertizing, A. W. Bitting. The Trade Pressroom, San Francisco. |
| (2b) 1923. C. O. Ball. National Research Council, Bulletin No. 37. | (4) 1920. National Canners Assoc., Bulletin 16-L. |
| 1928. C. O. Ball. Univ. of Calif. Publications in Public Health 1, 15. | (5) 1939. National Canners Assoc., Bulletin 26-L, Fourth Edition. |

We want to make this series valuable to you, so we ask your help. Will you tell us on a post card addressed to the American Can Company, New York, N. Y., what phases of canned-foods knowledge are of greatest interest to you? Your suggestions will determine the subject matter of future articles. This is the sixty-ninth in a series which summarizes, for your convenience, the conclusions about canned foods reached by authorities in nutritional research.



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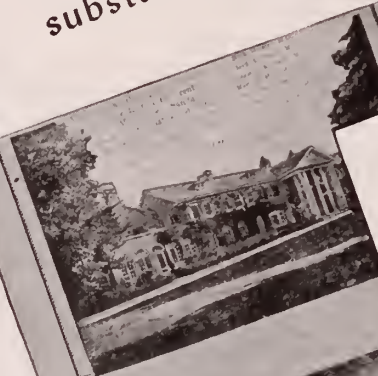
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• "PYURIA. In 76 per cent of 55 cases who complained of pyuria, there was a marked diminution of pus in the urine, or no pus at all, after seven to twelve days of pyridium therapy."

*Reynolds, J. S., Wilkey, J. L., and Choy, J. K. L., *Clinical application and results of pyridium therapy*, Illinois M. J. 78:544-547, Dec. 1940. (From the Urologic Services of Drs. Harry Culver, Leslie L. Veseen, Harry C. Rolnick, and Dorrin F. Rudnick, and the Department of Therapeutics, Director, Dr. Bernard Fantus.)

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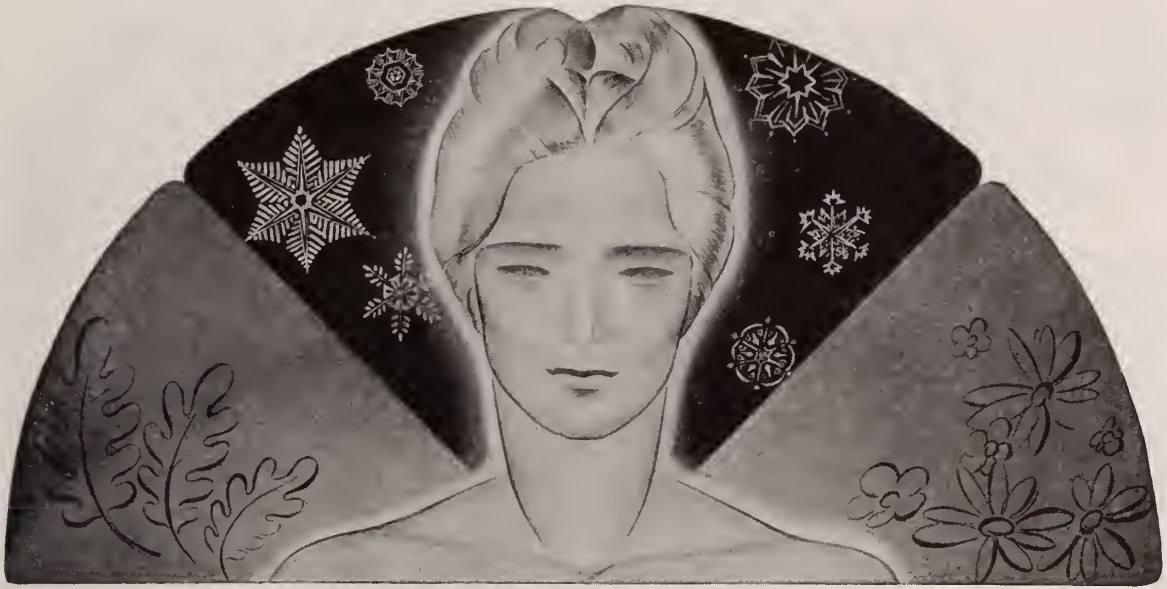
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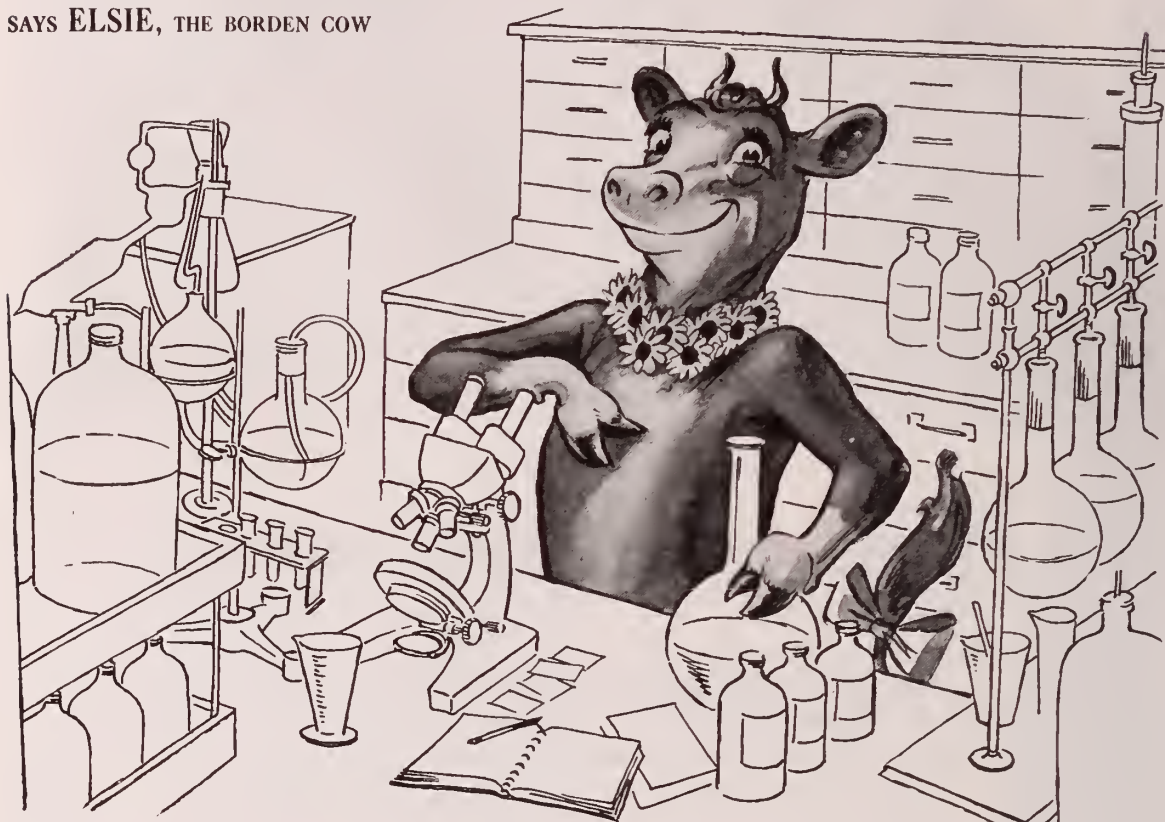
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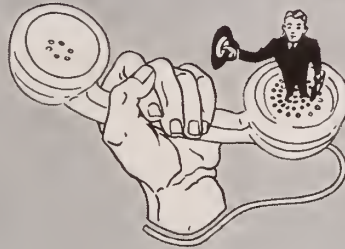
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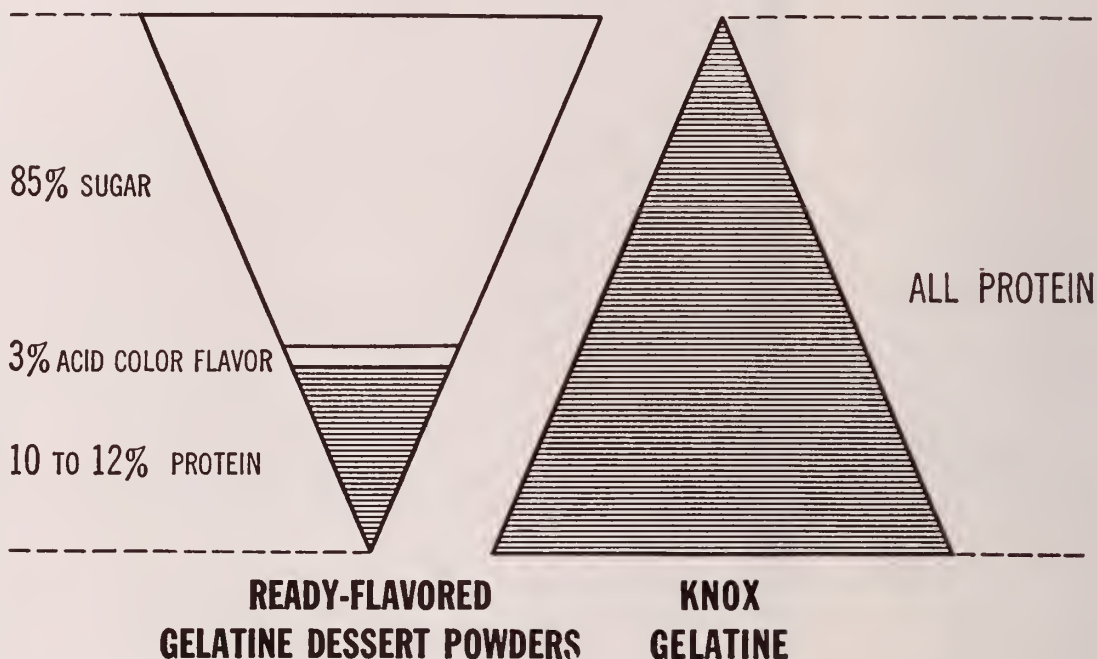
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Editorials

IT CAN BE DONE BY ORGANIZATION

Only by organization that will make itself felt at the polls, only by the strength of the ballot sagely and emphatically applied, can medicine hope to save itself and humanity.

History has a habit of repeating itself. It is of record that never during any calamity, no matter how catastrophic, have the disciples of Aesculapius ever abandoned humanity, though it would seem that humanity has now deserted medicine and ethical ideals.

And so now, as never before, it is necessary for closely organized groups of medical men to fight with unprecedented vigor for their rights and principles. Much has been done in the past few years towards educating the general public in the ways and ideals of ethical medicine, if not as to its prerogatives. Unfortunately the profession itself needs this instruction in the ways and the intrusions of the general public — especially the methods of the lawmakers, the medico-politicos, the socialistic agitators and the scheming bureaucrats who have taxed us all so heavily.

IS SMOKING A HEALTH HAZARD?

Recent increase in the consumption of cigarettes in the United States by both sexes, but particularly by women, has renewed interest in the effects of smoking upon the human body, and a sincere effort on the part of medical science is being made to determine whether current criticism, gained chiefly at the expense of the cigarette — and by the same token of the woman smoker — is valid.

Late figures show that for the fiscal year ending June 30, 1940, tobacco consumption was as follows: 51½ billion cigars, 178 billion cigarettes, 130 million little cigars, 2½ million large cigarettes, besides 302 million pounds of chewing and smoking tobacco. Only regular size cigars and cigarettes showed an increase over the preceding year; all other types showed a decrease in consumption. In the cigarette field the gain

was 5.75 per cent. showing that apparently the woman smoker is having her day.

Girls' schools that even a decade ago showed a cold shoulder to the student who felt that smoking was essential to her happiness now make haste to woo her with an attractive smoking room. The reason is simple. Principles, presidents and headmistresses discovered that girls *would* smoke on the sly; so they decided that executive sanction might rob the action of the thrill of enjoying forbidden sweets.

Removal of the taboo has brought to light some facts concerning smoking in our leading women's colleges. Questionnaires answered by Wellesley students showed that by 1937 smoking had increased from 53 to 70 per cent. over 1930; while at Bryn Mawr more than half of the student body smokes. Over 82 per cent. of the young women at Wellesley inhaled. Reasons for smoking included: pleasure, curiosity, friends did and social considerations.

We may truthfully say that the lid is off and advertising, insidious and effective is having its day. Occasionally one finds a lone voice crying in the wilderness like Professor X — of a well-known Chicago institution of learning, who, single-handed, has made a number of firms back down on advertising statements by sheer presentation of scientific fact.

Smoking as a moral issue is long passé, and today social agencies do not recognize the problem as such. People simply will not cut down on smoking unless it can be proved to be injurious to the health — and frequently not even then. Here is where it is up to the medical profession to assume responsibility.

Current periodical literature during the past year and a half alone would reveal nearly one hundred fifty articles on smoking, about one-third of them appearing in strictly medical publications. This would indicate that a sincere effort is being made to determine whether cigarette advertisers shall have the last word. A wide variety of medical opinion is expressed as to the harm inflicted by cigarette smoke.

Medical research in its published results has in general made no distinction between men and women patients. Therefore we may apply findings equally to both.

An interesting fact was brought out at Washington University, where an elaborate machine for measuring the volume of smoke of the aver-

age puff on a cigarette was invented. The total volume of respiration was determined to be 500cc, while the volume per puff ranged between 25cc and 40cc. Some of the higher volumes were recorded among the women. Because of various smoking habits it has been pointed out that the nicotine content in tobacco has no strict relation to the amount appearing in the smoke. Therefore the interest in the amount of smoke inhaled.

One differentiation between men and women smokers recorded in recent medical literature occurred in the matter of taste preference. Donald A. Laird¹ tested 150 subjects for reactions to tartness of fruit juice. Smoking made no difference in the preference curves for men in either age group or for women in the 20 to 40 age group. Older women who smoked showed a predilection for tartness, from which Laird facetiously concluded that the proper gift for a smoking grandmother was not a box of candy but a jar of pickles.

While it is well known that cancer of the mouth, lips, tongue, larynx, pharynx, etc. is more prevalent in smokers than nonsmokers, strangely enough the increase in the number of women smokers has not been paralleled by a corresponding increase in the incidence of cancer of the mouth and adjacent regions in women.

The effects of smoking upon pregnant women are still being debated. The truth probably lies midway between affirmations that it is disastrous and the statement that melancholy tales about extreme ill effects of smoking upon women and their babes are largely mythical. The obstetrician who remarked that he dreaded handling the case of a society woman who smoked to excess doubtless reflected the sentiment of many of his colleagues.

A reexamination of the effects of cigarette smoking upon the human body, as seen by the medical profession today, may prove worthwhile in view of the increased consumption. What are the charges laid at the door of the cigarette, and just how seriously should we take them?

Local Irritation — Causative Elements: Local irritation has been ascribed to various elements in the cigarette. Just what are these elements and how large a part do they play?

Irritation has been attributed to heat burning the lips and mucous membranes. This factor

1. Laird, Donald A.: The Effect of Smoking on Taste Preferences, *M. Rec.* 149: 404, 1939.

may be important in connection with cancer of the lower lip noted in devotees of short-stemmed clay pipes. Some ads would lead us to believe that it is also true of cigarette smoke.

Accurate measurements show that the temperature of the smoke inhaled changes little from that of the room air during the burning of the first quarter of the cigarette. With successive puffs there is a gradual rise until about one-half of the cigarette has been consumed, when the temperature usually reaches approximately that of the body. As the stump is burned, the temperature continues to rise, and painfully hot smoke may be obtained. Accordingly, a cigarette holder may lead to actual burns from hot smoke. Temperature range does not vary with the different brands. Mentholated cigarettes give the effect of coolness, but under unsafe and undesirable conditions.

Emil Bogen² states that the irritating properties of tobacco are independent of the nicotine content. To prove this, he cites the fact that Porto Rican cigarettes, with a low nicotine content, are frequently regarded as the most irritating. It has been suggested, he says, that irritation might be related to the "free nicotine" in cigarettes. Studies show that "free nicotine" is inversely proportional to hydrogen concentration of tobacco, and that actually it is greater in the Porto Rican brands, for which most irritation is claimed. Bogen asserts that there is no confirmation for the claim that nicotine is converted into pyridine during the smoking process.

While it is chemically possible to extract nearly all nicotine from cigarettes, no commercial product does this, despite advertising claims. The nicotine content of one cigarette may run as high as 3.3 mgs.; even if 70 per cent. is removed, 1 mg. is retained. The average content is 2.52 mgs., of which 2.0 mgs. is absorbed by the system when about two-thirds of a cigarette is smoked and inhaled in a period of 5 minutes.

The irritation to the eyes of the bystander so noticeable in a closed room in which smoking is done probably is accounted for by the ammonia content, the smoker himself absorbing very little of the ammonia through his mouth.

Traces of hydrogen sulphide, menthyl alcohol and cyanide are negligible factors in irritation, although tarry substances may be of importance.

The reputed antiseptic properties of smoke have been ascribed with conflicting results to the formaldehyde content of the smoke, which is present in greater concentration in American tobaccos. The presence of furfural and formic acid adds to irritation. In cigarettes treated with hygroscopic agents, acrolein may actually be an irritant. Acrolein is present in the native fats of tobacco, but more comes from the 2 or 3 per cent. of glycerin added to hygroscopic agents.

The belief that combustion of cigarette paper contributes to irritation has led to repeated attempts to eliminate it. Actually the amount of smoke from the paper is too low to be of consequence, and most papers have been proved free from irritating nitrates.

The arsenic originating in insecticides used on the plant may be concerned in chronic skin lesions, but smoke contains too low a concentration to cause local irritation or acute arsenical poisoning.

In summarizing, we may say that irritation to the eyes of the bystander is due to ammonia and the alkaline content of smoke from the burning end of the cigarette. Irritation of the mucous membrane may result from heat, "free nicotine," pyridine, and other nitrogenous bases, volatile acids, tarry and phenolic substances, and particularly the aldehydes liberated in the smoke.

Bodily Reactions to Cigarette Smoke: Minor symptoms reported by habitual smokers in a recent experiment include a dry or irritated throat, husky or hoarse voice, excess secretion, mucus, stuffiness and dryness of the nose, sneezing, coughing, tickling of the throat, burning of the tongue, "dopey" feeling, burning and fatigue of the eyes, bad taste, nervousness and loss of appetite. The total number of symptoms was higher for a heavy smoker as we might expect.

Among the effects of tobacco poisoning are: amblyopia, tinnitus aurium, nerve type deafness, tendency to heartburn, symptoms simulating duodenal ulcer, contact ulcers, vasospasm and cardiac irregularity. In the gastric function it causes a rise in secretion and inhibits hunger. On the intestines, x-ray studies have shown colonic hyperirritability which produces either diarrhea or spastic constipation. Many tobacco buyers and workers are known to be subject to eczema and other erythematous or maculopapular rashes when handling certain tobaccos.

Charles B. Hollis³ truly points out that smok-

2. Bogen, Emil: Irritant Factors in Tobacco Smoke, Calif. and Western Med. 45: 342-346, 1936.

ing has become so universal and the so-called tobacco cough so common that physicians have never generally accepted it as a pathologic entity. "I wonder," Hollis says, "how many millions of cases of permanent physical or mental change could be tabulated, if we were all tobacco conscious to the degree of recognition of this situation when we see it."

The main reasons for the infrequency of serious poisoning are that the percentage of nicotine in tobacco is too small to make it easy to get a fatal dose from the ingestion or the inhalation of its smoke, and that nausea and vomiting are early symptoms which ordinarily prevent further absorption of the drug.

Longevity: The effects of nicotine upon longevity are fairly generally accepted. Raymond Pearl's studies indicated that even moderate smoking decreased the life span, while heavy smokers have a much poorer life expectancy than heavy drinkers. The findings of James J. Short, Harry J. Johnson and Harold A. Ley⁴, based on questionnaires to an unselected group of 2031 insurance policy holders, which were obtained independently of physical examinations, indicate a trend in accordance with Pearl's report, which showed increased mortality among heavy smokers.

Cigarette Smoke in Throat and Lungs: What does recent medical research reveal concerning the reaction of the throat and lungs to cigarette smoke? Ballenger⁵ insists that he is unable to pick out a "smoker's throat." He concludes that no definite relationship exists between the enlargement of the lymphatic tissue of the pharynx and the number of cigarettes smoked per day and maintains that local effects of cigarette smoke on mouth, throat and nose are debatable. On the other hand he disputes the claim that any certain hygroscopic agent is less irritating than another. He found no significant difference in irritation between cigarettes treated with diethylene glycol, those moistened with glycerin and cigarettes containing no hygroscopic agent. When he found irritation present, it was not sufficiently marked to justify

definite conclusions. To eliminate possibilities of error, he used three lots of cigarettes made by one manufacturer of the same batch of tobacco.

A prominent roentgenologist to whom Charles Hollis had sent a patient remarked that although one does not see the phrase in textbooks, he has learned to appreciate an appearance of chest x-rays to which he refers as "tobacco lungs." Such testimony would indicate that tobacco damage to the lower respiratory tract can be demonstrated upon x-ray plates.

Hollis continues, "I maintain that there is much evidence to support an opinion that the mucous membrane effects are probably secondary to the many and often repeated shocks resulting from either atopic or acquired sensitivity to the combustion products of tobacco smoking, or to direct drug action, which lead to varying degrees of tissue changes. I have been unable to find any literature bearing upon favorable results with the use of prepared tobacco antigens for respiratory tract manifestations, although they are used with great satisfaction in the eczemas seen in tobacco handlers."⁶

Smoking and Coronary Disease: In certain individuals with coronary disease the use of tobacco has been known to precipitate or aggravate angina pectoris. Whether or not tobacco leads to permanent changes in coronary vessels has been a matter of controversy. That it would be difficult to establish as a fact such a thing as a tobacco angina is the belief of Herrell and Cusick.⁷ They state that tobacco may bring about spasm in a coronary arterial tree which is already diseased and cite one case. The patient, a 54-year-old white male, was seized with an attack on July 4, 1934. Until this time he had smoked 40 cigarettes and 4 cigars daily. He ceased smoking, but had one attack suggestive of angina in 1935 and another in 1937. When he was seen in July, 1938, he was requested to inhale the smoke from a cigarette and in a short time reported substernal pain. He was told definitely never to smoke in the future.

B. J. Birk and H. H. Huber⁸ cite 3 cases of

3. Hollis, Charles B.: A Consideration of Certain Respiratory Phenomena Resulting from the Use of Tobacco, *Dis. of Chest* 5: 8-13.

4. Short, James J., Johnson, Harry J., Ley, Harold A.: The Effects of Tobacco Smoking on Health, *J. Lab. & Clin. Med.* 24: 586-89, 1939.

5. Ballenger, Howard C.: Irritation of the Throat from Cigarette Smoke, *Arch. of Otol.* 29: 115-123, 1939.

6. Hollis, Charles B.: op. cit.

7. Herrell, Wallace E., and Cusick, Paul L.: Effect of the Inhalation of Smoke on the Vascular System, with Reference to Changes in Blood Pressure, *M. Clin. North America*, July, 1939. Mayo Clinic Number.

8. Birk, B. J. and Huber, H. H.: Angina Pectoris and Tobacco Smoking, *Wis. M. J.* 38: 733-35, 1939.

angina pectoris caused by tobacco smoking. Changes noted in electrocardiograms were so definite as to warrant presentation of cases, but this is far from being final proof.

In the first instance a married, white male, seen on January 17, 1935, complained of pain in the chest, which radiated to the left arm, on bowling, a fast pulse and "sweats" on the slightest exertion. He smoked 4 packages of cigarettes daily. An electrocardiogram showed the T-wave in Lead II to be diphasic and in Lead III inverted. Blood pressure was 142 systolic and 90 diastolic. On February 17 the patient felt better, but had suffered 2 attacks after rapid eating. At this time he stated that after smoking 3 to 5 cigarettes he became light headed, and after one cigarette, temperature in the extremities dropped to 0.4 C. An electrocardiogram taken after 24 hours of no smoking showed nothing abnormal. On February 28, 1935, with the patient smoking 5 cigarettes daily, the electrocardiogram was normal.

The second case was that of a married woman aged 40, first seen on Sept. 24, 1936. She drank 3 cups of coffee daily and a moderate amount of liquor and smoked a package and a half of cigarettes. After one cigarette in the morning she felt light-headed and weak. She complained of numbness in arms and legs, dizziness on change of posture, some precordial pain, shortness of breath and tachycardia on climbing stairs. Blood pressure was 120 systolic and 60-0 diastolic. Her skin reaction to nicotine was negative. An electrocardiogram showed evidence of myocardial damage. Tobacco was prohibited. On Nov. 3, 1936, the electrocardiogram was normal and the patient felt greatly improved.

The third case reported was that of a married man aged 38. Prior to Oct., 1933 he worked very hard and smoked from 3 to 4 packages of cigarettes daily. In October he had an attack at night lasting four hours, but improved after taking amytal and quinidine. An electrocardiogram showed inverted T-waves in Leads II and III. After two weeks in bed the patient felt well and returned to work. In January, 1934, he commenced smoking again and six weeks later had another attack. The electrocardiogram showed inversion of the T-wave in Lead III and a deep Q-wave, essentially negative. After cessation of smoking, taking moderate exercise and losing some weight, he felt fine. An electrocardiogram

taken January 17, 1938 showed nothing abnormal.

Harry J. Johnson⁹ studied the electrocardiograms of 2,400 apparently healthy males to determine the effect of smoking on coronary heart disease. Two groups were used: those who admitted to smoking continuously for more than ten years and those who had never used tobacco. He found a 50 per cent. increase in abnormal electrocardiac observations among the smokers as compared with the nonsmokers. This would seem to indicate that smoking does play some part in the subsequent development of abnormal electrocardiac changes. More significant is the fact that the nonsmokers were an older group averaging 48.5 years, as compared with 47 years for the smokers. Besides the incidence of overweight was slightly higher in the nonsmoking group.

Sulzberger¹⁰ states that some cases of certain diseases of the vascular system (thromboangiitis obliterans, angina pectoris, coronary disease), clinically long considered to be in some way connected with smoking, are manifestations of hypersensitivity in certain segments of blood vessels to circulating allergens derived from or contained in tobacco.

Whether or not an actual causal relation between tobacco and thromboangiitis obliterans can ever be established, it is an absolute necessity in the management of this disease to avoid the use of tobacco completely. The use of patented filters and the so-called denicotinized cigarettes must likewise be prohibited, as there is at present voluminous proof that the filtering and denicotinizing processes are not adequate to prevent the vasospasm associated with smoking.

Vasoconstrictive Action of Tobacco: The role of tobacco in the production of vasospasm may not be great, according to the belief expressed by Herrell and Cusick,¹¹ yet it is certainly not to be disregarded. Previous claims for possible effect of tobacco smoke inhalation were based upon blood pressure readings taken immediately following application of the so-called smoking test. Some investigators are reluctant to recog-

9. Johnson, Harry J.: A Study of 2,400 Electrocardiograms of Apparently Healthy Males, J.A.M.A. 114: 561-63, 1940.

10. Sulzberger, Marion B.: Recent Immunological Experiments in Tobacco Sensitivity, Bull. N. Y. Acad. Med. 9: 294, 1933.

11. Herrell, Wallace E., and Cusick, Paul L.: op. cit.

nize these findings as definite proof of the vasoconstructive action of tobacco.

Herrell and Cusick gave their patients the standard smoking test. The patient does not smoke for 10 hours before the test. After a 30-minute rest, the basal blood pressure is taken. Then the individual inhales smoke of from 1 to 2 cigarettes, during which time blood pressure and pulse are recorded every 3 to 4 minutes. The investigators found an increase in diastolic blood pressure almost identical with increase noted during the cold pressor test. The systolic blood pressure in a number of cases demonstrated a greater increase following inhalation of smoke than it did after application of the cold pressor test. In one group of patients there was a marked decrease in the dermal temperature of the extremities. It was also found that different brands of cigarettes vary considerably in their ability to produce vasoconstriction and that common filters did not affect the observed constrictions.

Hines and Roth of the Mayo Clinic confirmed the observations of Herrell and Cusick.

It has been fairly well established that smoking does cause peripheral vasoconstriction, as indicated both by lowering of skin temperature and plethysmographic measurements showing diminished blood flow. Many observers have demonstrated that 1 to 3 cigarettes diminish skin temperature as much as 10 degrees Fahrenheit. Thirty minutes are usually required to return to normal skin temperature.

Mulinos and Shulman¹² state that peripheral vasoconstriction may be caused by the pharmacologic activity of the constituents of cigarette smoke, by irritation and by deep inhalation, or by the effects of all three factors combined. They conclude that vasoconstriction from smoking is not due necessarily to nicotine, since smoke from "denicotinized" cigarettes used in their experiments was as effective as that from standard cigarettes in producing vasoconstriction. They suggest that irritation may be a factor. Inhalation, they found, plays an important part. "Inhalers" took but 11 puffs, while "noninhalers" took 21, yet the subjects who inhaled revealed greater and more persistent vasoconstriction. Even the same subject did not show the same degree of vascular reaction from day to day. They also bring out the fact that inhalation of

smoke results in constriction of the arterioles of the forearm and hand indistinguishable from the constriction which follows deep breathing.

Abramson, Zazeela and Oppenheimer¹³ observed the effects of smoking in a series of normal subjects and in a series of patients suffering from different peripheral vascular disorders. They found that a maximal response to smoking was elicited only in an extremity in which the blood vessels were neither excessively dilated nor constricted. The greatest decrease in blood flow occurred in the hand. The changes were less marked in the foot and leg, and there was no change in the forearm.

On the basis of the observations of Grant and Pearsons, the experimenters assumed that local blood flow changes in the hand were dependent to a considerable degree upon alterations in the caliber of cutaneous blood vessels, whereas in the forearm the muscle vessels play the dominant role. If these assumptions are correct and if the muscle of the forearm can be representative of similar tissue elsewhere at the periphery, then the statement can tentatively be made that smoking causes constriction of the arteries of the skin, but apparently has little, if any, effect upon those in the voluntary muscle.

Judging from these results, it would seem that the usual statement that smoking causes a decrease in peripheral blood flow should be modified to indicate that the decrease probably takes place only in the blood vessels of the skin, and not in the voluntary muscle. Constrictor response to smoking observed in the hand cannot be considered as typical of reactions of blood vessels elsewhere in the body.

Tobacco and Ocular Spasmogenic Tendency: Certain types of individuals apparently are subject to smooth muscle spasm. Robert Lambert¹⁴ has pointed out that among the factors which predispose toward ocular spasm is the use of tobacco.

12. Mulinos, Michael G., and Shulman, Israel: The Effects of Cigarette Smoking and Deep Breathing on the Peripheral Vascular System, *Am. J. Med. Sci.* 199: 708-720.
13. Abramson, David I., Zazeela, Herman and Oppenheimer, B. S.: Plethysmographic Studies of Peripheral Blood Flow in Man. III. Effect of Smoking upon the Vascular Beds in the Hand, Forearm and Foot, *Am. Heart J.* 17: 194-205, 1939.
14. Lambert, Robert K.: The Spasmogenic Tendency and Its Relation to the Eyes, *New York State J. Med.* 334-337, Mar. 1, 1940.

Lambert cites two cases, the first that of a male, 45, a physician, who was almost completely unable to read for more than a few minutes at a time because of severe headaches and eyestrain. He was a fairly heavy smoker, consuming many cigars and a pack of cigarettes a day. Very little change was made in the patient's correction, but he was asked to eliminate tobacco and use tincture of belladonna gtt. 10 three times a day. The function of his eyes began to improve in a few days, and he was soon able to do an adequate amount of reading.

The second case was that of an irritable housewife aged 38, who had been wearing for some years a low myopic correction with slight alterations. Reading produced pain which forced her to stop. The patient herself desisted from smoking several years ago as it disagreed with her. She was referred back to the family physician and put on tincture of belladonna gtt. 10 three times a day. She was greatly helped and could read. In addition to her reading disability there were numerous neurotic manifestations; psychoanalysis was resorted to and marked improvement resulted.

Recent work from the Mayo Clinic by Herrell and Cusick confirm Lambert's report. They found that inhalation of smoke caused the arterioles of the retina to narrow. The subjects used were not allergic to tobacco.

Reaction of the Alimentary Tract to Cigarette Smoke: Studies have shown that there is considerable individual variation in toleration to tobacco as it affects the alimentary tract. In view of development of some tolerance to tobacco, it is not surprising that many chronic smokers manifest no significant changes in the activities of the stomach and colon. When the limit of tolerance is approached, one would expect these organs to be influenced. In most subjects, smoking reflexly stimulates the secretion of saliva. Acutely toxic doses of tobacco or nicotine do provoke vomiting or diarrhea. Smoking tends to cause significant gastric retention and an increase in acidity only in an occasional patient, although smokers have a tendency to hyperacidity more often than nonsmokers. Only when marked alterations in blood pressure occur does smoking affect the secretion of bile and pancreatic juice.

Three experimental patients of Schnedorf and

Ivy¹⁵ collapsed after smoking on an empty stomach, indicating that the effect of smoking on the cardiovascular system of some subjects may be sufficient to produce gastrointestinal disturbances.

Patients with stomach or intestinal ulcers are generally warned not to smoke to preclude irritating the ulcers. Not much evidence has been brought forward to support the necessity for this admonition, although abstinence from tobacco is thought by some physicians to be chiefly responsible for the alleviation of peptic ulcer.

Tobacco Allergy: That there is some protein or undetermined constituent of tobacco or its smoke to which certain people are allergic has been proven by a number of published studies. Peshkin and Landay¹⁶ showed that a striking parallelism exists between cutaneous reactions to tobacco and those to pollen. This reaction is specific and transferable passively. His study was based on 200 afebrile nonallergic children and 164 allergic children. Sex played no role in the incidence of reactions in the various groups tested. Of the nonallergic children, 17.5 per cent. reacted to tobacco. Of the 164 allergic children, 69.5 per cent. reacted to tobacco.

Tobacco and Cancer: Often the high frequency of cancer of the lip, tongue and throat in men as compared with women has been attributed to persistent irritation of the epithelial surfaces by tobacco tar. In contrast to the findings of Roffo, who succeeded in producing a larger number of papillomas and true malignant growths after continued application, is the report of Kanematsu Sugiura.¹⁷

Sugiura painted the skins of mice with combustion products of tobacco distilled over at temperatures between 100 and 900 degrees Centigrade. He produced but a single instance of squamous carcinoma among 168 Baggb albino mice that lived from 90 to 500 days. No cancerous change was produced by painting the skins of C57 black and dba mice, as well as the ears

15. Schnedorf, J. G. and Ivy, A. C.: The Effect of Tobacco Smoking on the Alimentary Tract, J.A.M.A. 112: 898-904, 1939.

16. Peshkin, M. Murray and Landay, L. H.: Cutaneous Reactions to Tobacco Antigen in Allergic and Non-allergic Children, Am. J. Dis. Child. 57: 1288-1309, 1939.

17. Sugiura, Kanematsu: Observations on Animals Painted with Tobacco Tar, Am. J. Cancer 38: 41-49, 1940.

of rats of Wistar Institute and rabbits of common stock.

It has been held by some doctors that the tar in cigarette smoke could account for lung cancer. Other doctors deny this insofar as smoke is concerned. At present there is little evidence of either a positive or negative nature.

Smoking As a Cause of Fatigue: Chronic smoking, by affecting nerves, heart, circulatory system, adrenal gland and blood sugar level can produce fatigue. Work published nearly 20 years ago showed that brain workers who smoked had less ability to respond to an increasing work load as the day wore on. In the case of athletes, reports show that the use of tobacco has a little adverse effect on endurance. In late 1938 a physician reported on six cases of extreme fatigue, some male and some female, in which all forms of treatment proved unavailing until he told his patients to stop smoking.

Shall We Smoke? Should this rather thorough inventory of possible evils resulting from smoking affect our attitude toward it? As someone has pointed out, the foregoing symptoms don't all occur at the same time, and a single minor difficulty is companionable. Accusations against tobacco as a cause *per se* of angina, cancer, or acute peripheral vasoconstriction still have to be proved. The work of Herrell and Cusick, of Sugiura and of Abramson, Zazeela and Oppenheimer would indicate that statements regarding cigarette smoke as a causative factor would have to be considerably modified.

Broadly speaking, it cannot be said that smoking within moderation has any marked deleterious effects on people in sound health. The danger lies in the degree. Ordinarily, the pleasure derived undoubtedly overbalances the possible harm.

On the other hand there is merit in sitting down occasionally and facing facts. Smoking *may* be the cause of that let-down feeling, if you have been smoking to excess, in which case cutting down is indicated.

ILLINOIS STATE MEDICAL SOCIETY COMMITTEE ON MEDICAL BENEVOLENCE

The House of Delegates of the Illinois State Medical Society at its Annual Meeting held May 21-22-23, 1940, voted that certain changes be

made in the Constitution and By-Laws to enable the Society to establish a Benevolent Fund for indigent physicians and their widows.

The plan adopted very closely resembles the one which has been operating in Pennsylvania for the past thirty-seven years.

We are publishing herewith the personnel of the Committee together with an outline of the purposes and the power given the Committee to carry on this work.

Committee on Medical Benevolence, John S. Nagel, Chairman 185 N. Wabash, Chicago, Ill. Charles H. Hulick, Shelbyville; Clarence H. Boswell, Rockford.

PURPOSES OF THE COMMITTEE

1. To create a Benevolence Fund:

- a. Through allocation of \$1.00 each year from dues of each member.
- b. Through gratuities, endowments, etc.
- c. Through the efforts of the Women's Auxiliary to the Illinois State Medical Society.

2. To investigate cases of alleged financial difficulties on the part of members, their widows or widowers.

3. When found worthy, to appropriate regular monthly benefits not to exceed \$25.00 to \$30.00 per month in any one case. When deemed advisable, may appropriate more over a short period of time when rehabilitation seems probable.

4. To designate the component society secretary in each county as the county chairman to submit applications from members for benefits, then to see that a questionnaire form is properly executed to give the desired information relative to the case. The councilor of the District may assist the Committee in submitting names of members, their widows or widowers, when he believes the individual is entitled to the benefits herein prescribed.

5. When it is the opinion of the Committee that the case is a worthy one and benefits should be allowed, the Chairman of the Committee should notify the Secretary of the State Medical Society, stating the amount agreed upon as the regular allowance, stating the intervals at which the benefits shall be paid, so that proper vouchers may be submitted.

THE INVESTIGATIONS

When it is reported to the Committee that a member, widow or widower of a member is needy and unable to secure the necessities of life, a questionnaire form shall be submitted from the Secretary's office asking for the following information:

1. A brief social history of the applicant, past and present. Data concerning reasons for being in want whenever possible, and all other pertinent information which will enable the Committee to take the proper action.

2. A brief financial history including present assets and income, sources and amount.

3. Disbursing of present resources (rent, food, clothing, etc.).

4. Statements as to probable permanency of the present distress.

5. Any possible sources of assistance such as:

- a. Relatives
- b. Friends
- c. Fraternal Organizations
- d. Insurance
- e. Pensions

6. Have all sources of help been solicited?

7. Additional information. Means by which influence might be exerted to find employment or some other source of income. Is there a possibility of rehabilitation? (With moderate financial assistance over a short period of time, would it be possible for the applicant to become self-supporting?)

PROCEDURE

Requests from members, their widows or widowers for assistance, if submitted to the Secretary, shall be referred to the Committee promptly. At the same time a questionnaire form will be submitted to the applicant or to the county society secretary, or to the Councilor if the information is submitted by him. All possible information which will aid the Committee in determining the eligibility for assistance, the amount actually needed, or if rehabilitation through short time payments is probable, should be submitted promptly.

Each case will receive the proper consideration by the entire committee which shall pass final judgment on:

1. Eligibility for aid.

2. The amount of aid.

3. Whether for a short time or permanently.

The decision of the Committee shall be final and there will be no higher authority within the Society to whom appeals from decisions of the Committee can be referred.

In the event that additional income is received and the individual is no longer eligible for further benefits, the county society secretary or the Councilor submitted the data, should notify the Committee of these facts promptly.

As soon as a reasonable amount is accumulated in the Benevolence Fund, only the income from the Fund shall be used to pay benefits.

The Medical Benevolence Fund shall be subject to an annual audit as are other funds of the Illinois State Medical Society, although merely the amount of the Fund, the payments made during the year, the additions to the Fund, and the interest from investments shall be mentioned. The names of beneficiaries shall not appear in the annual audit, nor shall they be mentioned in the annual report of the Committee to the House of Delegates.

The Secretary of the State Medical Society shall maintain a separate file for all correspondence relative to beneficiaries, amounts paid, investigations and minutes of meetings of the Committee, which shall be a closed file and not open to inspection by others than members of the Committee, the Auditor, or a regularly designated Committee of the House of Delegates.

As the regular vouchers of the Illinois State Medical Society are paid through the State Bank and Trust Company of Evanston, all funds for benevolence purposes shall be maintained in another bank and payments for benevolence purposes shall constitute the only vouchers drawn on these funds. The council of the Illinois State Medical Society has allocated the sum of \$5,000.00 maintained in the National Bank of Monmouth for several years as a Certificate of Deposit, as the nucleus for the Benevolence Fund, and payments shall be made from this fund on this bank.

NOTE: The above report and procedure was presented to the Council of the Illinois State Medical Society in regular session on August 4, 1940, by the Chairman of the Committee on Medical Benevolence. The report and procedure

were approved, and the Committee instructed to make the necessary arrangements to function immediately. The Council was authorized by the House of Delegates at the 1940 annual meeting to approve a method of procedure so that the work could be started with a minimum amount of delay.

THE COST OF WAR

According to figures compiled by the Carnegie Endowment for International Peace, the last world war, all told, cost apart from 30,000,000 shattered lives, \$400,000,000,000.

With that sum of money we could have built a \$2,500 house equipped with \$1,000 worth of furniture, placed it on five acres of land worth \$100 an acre, and given this home to each and every family in the United States, Canada, Australia, England, Wales, Ireland, Scotland, France, Belgium, Germany and Russia.

We could have given to each city of 200,000 inhabitants and over, in each of the countries named, a \$5,000,000 library, a \$5,000,000 hospital, and a \$10,000,000 college or university.

Out of what was left we could have set aside a sum that would, at 5 per cent, provide a decent yearly salary for an army of 125,000 teachers and a like salary for another army of 125,000 nurses.—*The Medical Bulletin*.

UTOPIAS

" *Plato it was who first set his mind to make men better by 'choice dissertations about utopias.'* He was the first, in Mr. Norman Douglas's words, 'to sit in marble halls and have a fair and fondly ardent *jeunesse dorée* reclining about (his) knees while (he) discoursed, in rounded periods concerning the salvation of their souls by means of transcendental Love.' No Platonist will swallow without protest Mr. Douglas's characterization of the founder of the Republic, but I quote it with approval here: for if, as Coleridge once observed, all men are born either Platonists or Aristotelians, then few physicians are in the former category." *Medicine in Utopia*, Herbert Silvette. *Bull. Hist. Med.* VII; 1013, November, 1939.

PREFER LOTTERIES TO M. D.'s

One third of the nation, according to the Government, can't pay its doctors. Yet 47 per cent of those in the lower-income brackets, and 45 per cent of relievers, had funds to gamble during the past year, a national survey by the American Institute of Public Opinion shows. The money of these medically-indigent went to operators of lotteries, punchboards, slot machines, card games, election bets.—*Medical Economics*.

PATIENTS' ABILITY TO PAY

The average American wage-earning family which lives in a city spends \$40.12 a year — less than 2.7 per cent of its income — for medical services. This covers the care of three persons, with a median annual income of \$15.15.

So reports the U. S. Bureau of Labor Statistics, after surveying the expenses of 14,469 self-supporting families in forty-two cities. The group's annual earnings ranged from \$500 to over \$3000.

Food, housing, clothing, transportation, fuel, recreation, furnishings, and household operations were found to take precedence over medical service in the budget. Apart from the necessities, the average home visited spends \$87 yearly, or more than twice its doctor's bill — on its automobile. What it lavishes on cameras, radios, movies, ball games, amusements, newspapers, tobacco, and play is likewise almost double what it pays its physician.

Of every dollar expended on health, 22 cents was discovered to go for medicines, eyeglasses, and appliances; 10 cents for hospitalization; and 68 cents for other medical services, including the doctor.—*St. Clair Co. Medical Bulletin*.

Increasing industrialization has been accompanied by a decline in mortality from tuberculosis, probably because of the general improvement in standards of living for the bulk of the people brought about by industrialization. Density of population itself does not determine the mortality from tuberculosis but there is some causal factor probably connected with crowding and social environment. For the time being at least the level of mortality from tuberculosis may be considered an index of hygienic and social culture. By this standard the United States ranks first among the world states even when the high mortality of the Negroes is included. Geo. Wolff, M.D., *Amer. Rev. of Tuber.*, July, 1940.

All we got out of the last war was widows and orphans, heartbroken mothers, crippled men, influenza, prohibition, income tax, cooties, and uncollectible debts. What else is there that we don't want and can assuredly get by horning in on another fracas "over there?"—*St. Clair Co. Medical Bulletin*.

Dogs may be infected under natural conditions with tubercle bacilli of the human and bovine types. A post-mortem study of 543 dogs showed an infection rate of 4.6 per cent. The bacilli were of the human type in 18 out of 22 cases which were examined bacterially sign in miliary tuberculosis. M. Leonard Gottlieb, M.D., *Med. Record*, Aug., 1940.

Enlargement of the spleen may be an important early sign in miliary tuberculosis. M. Leonard Gottlieb, M.D., *Med. Record*, Aug., 1940.

MEDICAL ECONOMICS

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The medical profession is most interested at the present time in the trial of the American Medical Association and its officers in the District Court of the United States in the District of Columbia. While this subject has received little mention in the public press, it is being reported in detail in the *Journal of the American Medical Association* in the Organization Section, where it can and should be read by every medical man in the state of Illinois as well as the rest of the United States. From that meager information available to the writer, this trial is expected to be quite lengthy and may be of considerable importance as it is one of the first cases in which violation of the Sherman Act by a group not definitely in trade is being carried to completion. Most of cases have been settled by consent decrees in which the defendants have agreed to make the changes desired by the Government and by so doing, little or no penalty is imposed. So if you can possibly spare the time, read the complete report of the proceedings in the case as published each week. It will be most interesting and at the same time instructive for it will show the desire and intention of the government in a way different from that in which it has been presented up to this time.

Second in interest, only to the above, is that of the medical profession in the examination of men under the Selective Service Act. This is a large undertaking which has been placed in the lap of the medical profession, particularly those over the age of 35 years. Without much assistance as to direction and almost completely without physical equipment, the medical profession were asked to step up and assume the responsibility for the examination and selection of those physically fit for military service. And to their credit, it must be said that they have done the work in a creditable manner, even though they were obliged to do much of the work in their own offices, often at the inconvenience of their patients and themselves. In the rare instances, in which mass or group examination

were made, most if not all of the equipment was furnished by the individual physicians. This has been reported to those men in control of the Selective Service work, both local and state and while they have admitted that the work was started without adequate preparation, they have as yet been unable to do more than sympathize with the medical profession and promise to correct some of the defects of the present system, which have been presented to them. The medical profession is ready and willing to keep the promise made in New York last June at the annual meeting of the House of Delegates of the American Medical Association, but to do the work in the best possible manner, they must have the active cooperation of the officers in charge of the Selective Service Act. These officers must listen to the suggestions of the men making the examinations, if they are to receive the right kind of men into the army, through the Induction Boards. The same standards must be required by both boards, if unwarranted criticism is to be avoided. We understand that regional meetings for the instruction of members of local Draft Boards are to be held early in February for this purpose.

The attendance of the National Conference on Medical Service, formerly The Northwest Regional Conference, was the largest in its history. 26 states were represented. The medical profession of Illinois was well represented in attendance, among the officers as well as in the discussions. Our own Secretary, Harold Camp was elected President for the coming year. The morning was given over to discussion of Voluntary Group Medical Care Programs in various parts of the United States and Medical Preparedness. It was soon evident that the last word had not been spoken on either of these subjects for there was great difference of opinion by the different speakers. Colonel Rowntree, Chief, Medical Division, Selective Service System, Washington, D. C., gave some very interesting information as to the results so far in the examina-

tion of men under the act. He approved of the work of the medical profession and hoped to have some of the difficulties ironed out in the near future.

Legislative problems, state and national were discussed in the afternoon. Dr. E. H. Cary made the statement that a new Wagner Bill was on the way, but at present it was not definitely known whether or not it would carry the name of the Senator from New York or that of another but in any event the writer would be the same, and the sponsorship would continue. So we must not become complacent and satisfied that all reform measures have been forgotten in passing 1776.

Dr. Douglass Hubble in a recent issue of *Lancet* wrote the following:

"It (National Health Insurance) fails to give a complete health service to the worker or an adequate opportunity to the family doctor. Moreover, the plan is not designed primarily to improve the health of the workers, and therefore has never had a sound clinical organization; no clinical supervision is exercised and there is no attempt to see that a high clinical standard of treatment and diagnosis is maintained. It often appears that the Ministry's interest in the performance of doctors is focused on the accuracy of their records and the cost of their prescribing.

N.H.I. fails to make use of the full powers of the family doctor, neglects the hospitals, and ignores the consultants, and any health service which does these things is no health service at all."

The above is a most severe criticism of a health service which has been in operation for thirty years, by a man who admits that the system has some merits.

At the meeting of the National Conference on Medical Service, a member of this Committee, Dr. W. M. Hartman reviewed the work done by this committee on the subject of Voluntary Health Insurance as needed in Illinois under the heading of "Why are we waiting in Illinois?" This entire article is presented for your attention immediately following in this column. It will serve as a preliminary report of the Committee. A more complete one can be expected at the annual meeting in Chicago in May. Take time to read it so that you will be conversant with what has been done in the study of this

problem here in Illinois and come to the annual meeting prepared to discuss it.

E. S. Hamilton

WHY ARE WE WAITING?

The Belleville Branch of the St. Clair County Medical Society, through its delegate O. C. Otrich, introduced the following resolution before The House of Delegates of the Illinois State Medical Society.

"Be it resolved, that a special committee be appointed to study the voluntary sickness insurance plans being developed by the constituent and component societies of the American Medical Association with the view of submitting to the Council, a plan for sickness insurance in Illinois.

Be it further resolved, that when the Council has approved such plan it be submitted to a regular or special meeting of the House of Delegates for its consideration.

Your Committee feels that careful consideration should be given to this subject, but is of the opinion that it should be referred to the Medical Economics Committee rather than to a special committee, and therefore recommends that the Economics Committee undertake the study of sickness insurance and the preparation of a plan for such insurance in Illinois in accordance with the recommendations contained in this resolution, and with the resolutions of the House of Delegates of the American Medical Association at its special meeting in Chicago in September, 1938."

This resolution was received by the House of Delegates who concurred in the recommendation of the committee offering the resolution, which then was referred to the Committee on Medical Economics May 4, 1939.

The Committee on Medical Economics then appointed a Sub-Committee consisting of C. H. Phifer of Chicago, C. B. Ripley of Galesburg, and W. M. Hartman of Macomb as chairman to make this special study.

The problem was a weighty one and of significant importance to every member of the medical profession in the state. In addition to securing all possible data concerning plans in operation in other states and plans under preparation for operation when the occasion or the demand appeared, it was suggested by the Council that an effort be made to determine, if pos-

sible, what the members of the medical profession in Illinois thought or felt about Sickness Insurance. To this end a simple short form questionnaire was prepared and sent to the secretaries of all County Medical Societies in the state.

The returns from this study, while small, were interesting. 48% of those solicited answered and returned their questionnaires, which may be used as an index of the interest or lack of interest in the subject on the part of the medical profession. The counties with large cities were the ones who failed to interest themselves in the questionnaires, strange as that may seem. One certainly would expect industrial centers to have some demand for Sickness Insurance. Cook County for example failed to reply.

It became increasingly apparent as the replies came in that there was confusion in the minds of our members as to just what was meant by Sickness Insurance. Plans for Sickness Insurances were repeatedly confused with plans for Group Hospitalization.

Some secretaries failed to distinguish the difference between Voluntary and Compulsory Plans, revealing that the technical details of Sickness Insurance were new and unfamiliar.

62% of the replies stated that there was a need for Sickness Insurance. Only 44% felt that the public desired it and 57% felt that the medical profession desired it. Only one reply apparently favored State Medicine or Compulsory Health Insurance in these words, "I personally prefer Compulsory Health Insurance because poor people will not do so voluntarily. However I believe it impractical and unenforceable and therefore think that a Voluntary Plan will be best."

Several of the county secretaries had their members vote on the questionnaires with the following results: 67% felt that there was a need for Sickness Insurance, 46% said that there was a public desire and 60% voted that the medical profession desired a plan. These figures of individual members parallel very closely those of county secretaries.

The only medical service plans in operation in Illinois were the Industrial set ups in large plants, the Student Health Services in our colleges and universities and the Farm Security Administration Medical Service Plans operating in some of our counties. In every instance

where a medical service plan was mentioned as being in operation or as being considered, investigation revealed that what the writer had in mind was a Group Hospitalization plan.

The survey definitely revealed that the majority of the medical profession in Illinois will favor some plan of Voluntary Sickness Insurance for low income groups, providing it is not too costly and that it can be sold.

When our committee turned to the study of the technical details of Sickness Insurance we found, as you all know so well, that publications on the subject were multitudinous, and that plans were numerous and varied in detail, and the terminology conflicting. One very important and publicly hidden fact became increasingly evident. The American Medical Profession has given more thought and study over a longer period of time to various plans of sickness insurance than those who so loudly and insistently favor them.

Sickness Insurance is far from simple. It is extremely complicated in its administration and in its legislation and for the present has no actuarial basis. Therefore the medical profession becomes the insurer in fact. The theory of Sickness Insurance and its practice are quite different.

And so our committee felt that while many plans were proposed and were being constantly altered, not only should we select a plan of real merit, but also of equal if not greater importance, we should avoid the grievous error of using a plan that had failed.

"Study should precede action. It is as dangerous to rush into plans for the reorganization of medical service without previous investigation and experiment as to follow a similar hasty adoption of untried drugs or diagnostic and therapeutic procedures. The customs, traditions, principles, and policies which have been built into the present system of medical practice closely affect the quality of medical care, to the maintenance of which the preeminence of this country in the conquest of disease and the postponement of death is largely due. These elements are constantly changing and will continue to change in the future. Organized medicine has introduced and perfected more changes than any other section of society. It will continue to experiment with such changes, but if the interests of the public are to be protected any funda-

mental change must be preceded by much the same sort of study and experiment as is used in evaluating new methods in diagnosis and treatment of the individual."

Bureau Med. Economics, A.M.A.

September 17, 1939, a special committee of the Council composed of John R. Neal, R. K. Packard, E. S. Hamilton and Harold M. Camp attended the meeting of the House of Delegates of the Michigan State Medical Society to study the Michigan Medical Service Plan which was up for final action.

This special committee reported that their study lead to the belief that this plan was the best of many then up for our attention and issued the following comment:

"Although the movement is designed to show the world that the physicians of Michigan are interested in the welfare of their citizens, and to show that they do not need any Federal control of the practice of medicine in their state, it seems quite logical to assume that governmental agencies may point to this, and many similar service plans in operation elsewhere, in their education campaign to convince the citizens and the law makers that people in low income groups are not able to procure adequate medical services, and use this as an additional argument favorable to a socialization plan for the entire country."

It appeared to our committees that there was some question as to just how much demand exists in Illinois for Sickness Insurance, and that such demand should be determined in a more definite manner with greater detail before action was taken. In other words do the people want a plan? It also was desirable to have a wider and clearer knowledge and a better understanding of Sickness Insurance among the doctors of the state as well as by the general public. And also we desired a better, more experienced background of successful operation of plans to serve as a basis for our participation. There was much evidence of great difficulty in selling these plans and of the need of making many necessary and constant changes in details as shown for example by New Jersey, the plan-a-month state. And lastly because of the many excellent try outs of carefully elaborated plans under way in our sister states we are continuing our studies, hoping to be able to avoid their errors, if any, and to benefit by their successes,

thereby obtaining the nearest approach to the ideally perfect Medical Service Plan — that one which in no way interferes or tends to interfere with the quality of the service. That is why we are waiting.

W. M. Hartman, Macomb, Ill.

Correspondence

OUR ANNUAL CONVENTION OF WOMAN'S AUXILIARY

To the Editor:

The growth of every worth while organization is entirely dependent upon its Success. Did it ever occur to you what the true meaning of that word, "Success" embraces? It is nothing more or less than, "the satisfactory completion of a Worthy Program," not a series of events that will benefit one or two individuals but a succession of useful projects, which will supply much help to people far beyond the limits of its membership. That is the purpose of our Auxiliary. It is our duty as a society to assist in the constructive development of a healthy and sound medical program for the people of our state, to formulate new plans, and construct new ideas, which will materially aid the State Medical Society as it meets new demands in this ever changing maelstrom of human suffering.

Our Auxiliary is like a huge industry having its central headquarters and many branches, each with its own experimental laboratory. The State Medical Society is constructed upon the same order. Each one of these branches, or experimental stations, is the place where the young theories are put into practice and tested before they are reported. Some will be applicable in practice, others will fail but if, out of the myriad of ideas which may be offered each year there comes one or two plans which prove worth while, our existence is richly justified.

Each year the President calls a meeting where reports are read and plans are discussed. If they have proven to be desirable they are adopted in the best interests of the state and for the betterment of the people of Illinois. This is an important meeting, one in which medicine is permitted to grow, one where history is often made. It has been called, "The Annual Convention" but it is far more than that, because usage has constructed in our minds a "Convention" to be a

time of gaiety, entertainment, and good fellowship. Never in the history of all medicine have such grave problems faced the healing profession and the sick.

It is true, this convention will have its gay spots, its entertainments and happy moments but down deep in the purpose of the meeting, of this year, is a determination to go forward in a stride and with a speed comparable to the rapidly changing problems of a chaotic and hysterical society. These are the issues we must face if we are to survive as a useful organization beyond the portals of a social club. We must do our part in the best interests of our suffering neighbors. We must meet the demands for the sake of that noble profession to which we have dedicated our lives; Medicine.

The Annual Convention is to be held at the Palmer House in Chicago on May 20th and 21st, 1941. Your state officers have made arrangements to make this the most outstanding convention in our history. The program is not yet complete but enough has been accomplished to assure the members of our State Auxiliary of comfortable quarters close to the center of all activities. Good entertainment is being contracted, adequate facilities have been engaged for all who can attend, while an active program has been constructed that will do honor to our auxiliary and inspire a wholesome progress, benefiting the people of this prairie state for years to come.

Mrs. C. W. Stuart
Chairman, Press & Publicity

FEBRUARY REPORT EDUCATIONAL COMMITTEE

SPEAKERS BUREAU:

41 — Talks were scheduled through the Committee for many types of lay organizations.

One doctor gave a talk on "The Heart" before the Sophomore Class of 750 students in one of the large high schools and the Committee furnished copies of one of its articles "The Ace of Hearts" for distribution to all students. Comments from the chairman are interesting — "I delayed writing to you until I had made a satisfactory check-up at school through the health teachers. The report was that the students appreciated the talk greatly. The 'bulletins' were distributed after the lecture in the various classes, and read with real interest. Many mothers have told me of the fine summaries of the doctor's lecture their children gave at the dinner tables that evening. They appreciated this sort of edu-

cation. They also mentioned having read the bulletins on Heart that the children brought home. The 800 bulletins reached a much larger audience than I had ever hoped.

Thank you for your help in this effort."

Programs were given in Chicago, Decatur, Elmwood Park, Mineral, Joliet, Kankakee, Kewanee, Chatsworth, Charleston, Cary, Evanston, Lincoln, Atlanta, Congress Park, Freeburg, Belleville, Macomb, Peoria, Galesburg.

One of the talks was before 550 teachers attending a county teachers institute and the superintendent reported — "Doctor T.'s command of his subject is well rounded and his delivery is exceptional. He handled the subject very, very well."

POST-GRADUATE EDUCATION:

Post-graduate Conferences have been scheduled as follows —

April 3 — Carbondale

April 9 — Joliet

April 24 — Galesburg

The programs are well under way and it is hoped that early publicity and the very evident interest on the part of those in charge of these conferences will bring a good attendance.

SCIENTIFIC SERVICE ACTIVITIES:

30 — Scientific programs were scheduled through the Committee. The following counties were assisted:—

Vermilion, Williamson, Perry, Bond, Will-Grundy, Madison, Winnebago, Effingham, McLean, Kankakee, Jersey-Greene, Rock Island, Knox, Lee, Henry, Stephenson, Franklin, LaSalle, Edgar, Douglas.

Aid to County Medical Societies:—

162 —	Notices prepared for	Effingham County
99 —	" "	Perry
50 —	" "	Jersey-Greene
170 —	" "	Knox
143 —	" "	Lec
189 —	" "	Henry
141 —	" "	Franklin
100 —	" "	Bureau
302 —	" "	LaSalle

1,356

Special Newspaper Publicity for Medical Meetings:—

72 —	Releases for	Effingham County
25 —	" "	Jersey-Greene
27 —	" "	Henry
37 —	" "	Lee
27 —	" "	Franklin
48 —	" "	Bureau
45 —	" "	La Salle
4 —	" "	North Shore Branch

PRESS SERVICE:

365 — Health columns furnished newspapers.
532 — Editorial style health columns furnished newspapers.
4,490 — Editorial articles to lay leaders throughout the state.

(requests from 6 additional people
in the month)

500 — Articles sent to Chicago Teachers College to be used by students in Health Education Class.

150 — Articles sent to Health Chairman of a PTA who distributes material to all members attending meetings and gives any remaining to the health education teacher of the school.

Articles written and approved by Committee for release to newspapers and to mailing list—

Medical Profession	Health Quiz
and Preparedness	Pneumonia & the
Tuberculosis	Common Cold
The Ides of March	The Good Old Days
Children & Their	Tributes to Medical
Skin Ailments	Heroes
Be Optimistic	Through a Looking
About Cancer	Glass

MISCELLANEOUS:—

26 — Letters written to Catholic schools offering health programs.

34 — Letters and notices to Chicago Hospitals re National Health Conference.

107 — Letters to Secretaries concerning program for Secretaries' Conference at Annual Meeting.

186 — Letters to Presidents and Secretaries concerning Pneumonia Programs.

300 — Notices released announcing Chicago Medical Society Public meeting on Cancer.

Letter telling about Summer Round-Up sent to Presidents and Secretaries of county and branch societies.

Letters sent to Summer Round-Up Chairmen urging them to contact officers of their medical societies before making plans for examination of pre-school children.

RADIO:—

Radio programs are being given over stations WJJD and WAAF. The dialogues over WAAF, prepared by Mrs. S. C. Kehl, wife of a Chicago physician, from the material furnished her by the Educational Committee, are very popular. The material is presented usually by Mrs. Kehl and some member of the Chicago Medical Society. The dialogue is breezy, full of good information, and on subjects of current interest.

On March 29th — 1:30, WAAF, Mrs. Kehl and Miss Specht a Health Supervisor for the Chicago Board of Education are giving a very fine program on ACNE. The Chicago schools are having announcements of the program given and notices will be published in all the school papers.

Respectfully submitted,
Jean McArthur

AMERICAN SOCIETY FOR THE CONTROL OF CANCER

In April the American Society for the Control of Cancer, through its Women's Field Army, will conduct in Illinois the annual enlistment campaign for

members in the latter organization. There are several reasons why this event should be of peculiar interest to members of the profession.

First: The American Society for the Control of Cancer for twenty-eight years has worked with and through the profession to lay the foundation for the cooperation of lay and professional groups in a continuing campaign for cancer control. The Society is pledged to a policy of medical leadership and domination in its advisory and executive bodies. In this respect it differs from almost all national organizations whose chief aim is the education of the laity.

Second: In States where the Women's Field Army's program is best developed there is clear and unmistakable evidence that there has been a great increase in the number and proportion of early cancerous and precancerous lesions reporting for diagnosis and treatment. This has been accomplished without any increase in hysteria or cancerphobia. In fact these symptoms have definitely decreased as the educational campaign progresses.

Third: In States where the medical profession, as an organization and as individuals, has cooperated most fully there has been no adverse criticism or accusations of unethical procedure. Actually the results have been quite the opposite and both the profession and the medical auxiliaries have benefitted in good will and public support.

Fourth: The American Medical Association heartily and unreservedly endorses the movement because after careful preliminary study supplemented by observation of accomplished results it recognizes the sincerity of its aims and the value of its achievements.

As yet Illinois is in the early stages of organization which is not surprising because of its great size and the impressive bulk of its population.

It is hoped that this and each succeeding year will find a marked and rapid increase in the numbers of the profession and the auxiliary who assume active roles in the furtherance of this great national humanitarian program.

NEW JOURNAL CANCER RESEARCH

The first number of the new journal, CANCER RESEARCH, contains 13 original articles and 241 abstracts of papers published in the latter half of 1940. Designed primarily as a monthly journal of articles and abstracts reporting results of research on cancer the new publication plans to make information available to laboratory workers, clinicians, and all persons concerned with the attack on malignant disease.

The subjects of the original articles include the following: the experimental production of cancer of the liver in rats by feeding butter-yellow, an azo dye; immunity against a cancer of rabbits; differences between malignant blood cells from induced and spontaneous leukemias in mice; stimulation and retardation of the action of cancer-producing chemicals in association with other compounds; an experimental method for removing cancer in rats by chemosurgery; tumors of guinea pigs; the effects of various hormones on the production and characteristics of can-

cers; and the excretion of sex hormones by women with cancer of the breast.

Eight of these articles were written by investigators working in this country, four by workers in England, and one by an author in Italy.

Of the total of 241 abstracts, 78 report summaries of cancer research papers, 11 are on statistical and general subjects, and 152 abstracts or citations deal with clinical reports. The journal intends to serve the interests of clinicians by providing a bibliography with short abstracts of all published clinical and pathological reports.

The need for this new journal has arisen because other journals in the field are being prevented by the war and other conditions from meeting the needs of prompt publication of an increasing volume of reports of cancer research. During the past twenty years there has been a great development of interests in the cancer problem as shown by the number of workers attracted to the field and by the increased financial support which has become available for the work. The resultant larger volume of reports of fundamental investigations has emphasized the need for improved facilities for prompt and economical publication. The increase in number of workers and the increase in number of institutions and laboratories engaged in cancer research also increases the need for pooling information in order to advance essential cooperation in the attack on the problem. In response to these needs three Foundations, The International Cancer Research Foundation, The Anna Fuller Fund, and The Jane Coffin Childs Memorial Fund for Medical Research have entered into cooperation with the American Association for Cancer Research in launching this new journal.

The management of the journal is planned to be as economical as possible, based on the experience of another successful scientific journal. The subscription price to members of the Association is \$5.00; for those who are not members and for institutions and libraries the subscription rate is \$7.00. The business office is at 1620 Lincoln-Liberty Building, Philadelphia. The editorial office is at 333 Cedar Street, New Haven, Connecticut.

THE VALUE OF THE MILK INDUSTRY

The value of the milk industry to the nation's economic system is visualized in a new book issued by the Milk Industry Foundation illustrating how the annual U. S. milk supply of nearly 51 billion quarts is utilized.

Fluid or fresh milk for cities and villages, providing the farmer's highest cash return, accounts for 29.9 per cent of the country's yearly production. Creamery butter takes 31.6 per cent, farm butter — 9.2 per cent, while 11.7 per cent of the milk used as fluid milk on farms where produced. In making cheese 6.3 per cent of the total milk is used; ice cream — 3.1 per cent and canned milks — 4.5 per cent, according to charts.

A chart of the distributors milk dollar shows

52.31 per cent going to dairy farmers for milk; 19.24 per cent to delivery labor; 8.21 to delivery expense; 6.33 — plant expense; 4.94 — plant labor; 2.78 — administrative labor; 2.18 — administrative expense; 1.68 — office labor; and profit 2.33 per cent, representing only a fraction of a cent per quart of milk.

"One out of every fifteen families in the U. S.," the MILK FACTS book says, "is dependent on milk for a livelihood and milk is the largest single source of farm cash income, larger than cattle, twice cotton, three times wheat, five times tobacco. There are 25 million cows on three quarters of the nation's 7 million farms.

"Milk and its products comprise over 25 per cent of the 1500 pounds of the principal foods consumed each year by the average American. Forty-five million quarts of milk are delivered daily to homes and stores.

The book contains many other facts by states about cows, farmers that furnish the milk and distributors whose efficiency has made the American milk distributing system a world standard.

EXAMINATIONS AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY

The general oral and pathological examinations (Part II) for all candidates (Groups A and B) will be conducted at Cleveland, Ohio, by the entire Board from Wednesday, May 28, to Monday, June 2, 1941, inclusive, prior to the opening of the annual meeting of the American Medical Association in Cleveland, Ohio.

Formal notice of the time and place of these examinations will be sent each candidate several weeks in advance of the examination dates.

Candidates for *reexamination* in Part II must make written application to the Secretary's Office before April 15, 1941.

The Board requests that all prospective candidates who plan to submit applications in the near future request and use the new application form which has this year been inaugurated by the Board. The Secretary will be glad to furnish these forms upon request, together with information regarding Board requirements. Address Dr. Paul Titus, Secretary, 1015 Highland Building, Pittsburgh (6), Pennsylvania.

"For my part I am still unconvinced that the family doctor is an anachronism. I still want somebody to save me from unsuitable or excessive specialist advice; I need someone to coordinate the findings of specialists and discount them if necessary; and above all I want someone who is willing to talk to me, at length, about my migraine, my little boy's delinquencies, my wife's recent strangeness, my baby's inoculation, and my daughter's desire to marry a man with asthma." Lancet. Copied by the New York State Jour. of Med., Jan. 1940.

OH, DOCTOR! MY FEET

New opportunities are suggested to the general practitioner, orthopedist, and roentgenologist by Dr. Dudley J. Morton, Columbia University professor of anatomy, in his new book, "Oh, Doctor! My Feet!" In it he reveals a new theory of the causes and treatment of foot troubles from which an estimated 50,000,000 Americans are suffering.

Fallen arches are a rarity and there's "no such animal as a metatarsal arch," says Dr. Morton. But there is hypertrophy of the metatarsal bones due to structural defects directly responsible for the foot troubles commonly ascribed to fallen arches and weak muscles. Refuting the forty-year-old concept of an arch extending between the front ends of the first and fifth metatarsals, with the second, third, and fourth bones relieved of weight by ligaments and muscles that hold them arched, the author contends that each metatarsal supports its share of weight in the ratio of 2-1-1-1-1, with the big toe taking the extra load.

When the big toe metatarsal is too short to carry its proportion of the weight, additional strain is thrown upon the others, a condition which may be properly diagnosed only by x-ray. The vertical view is of greatest importance, he says.

Treatment consists of rest, contrast plunges, and the use of a specially designed insole to be prescribed by a physician. Dr. Morton points out that only general practitioners, because of their number, can cope with a problem of such magnitude — fifty million patients — with the orthopedist handling the more difficult cases and the roentgenologist providing the means for diagnosis.—*Victor News*.

FIND SPOTTED FEVER SERUM

WASHINGTON—Serum that may prove a cure for Rocky Mountain spotted fever, the tick-borne disease that every summer threatens ranchers in the far West and suburbanites on the Eastern seaboard, has been made by Dr. Norman H. Topping, National Institute of Health of the U. S. Public Health Service.

The serum, so far used only on guinea pigs and monkeys, is "the first definite hope of a specific treatment for Rocky Mountain spotted fever," officials of the National Institute of Health declared.

Guinea pigs and monkeys survived usually fatal doses of spotted fever virus when treated after they became sick with blood serum from rabbits that had been immunized to the virus. Details of the preparation of the serum are reported by Dr. Topping in the current issue of Public Health Reports.

Public health officials hope the serum will prove as useful in treating sick humans.

USE CHEMICAL TO RELIEVE VERTIGO

ROCHESTER, Minn.—A new chemical treatment that brings swift relief from acute attacks of Ménière's disease has been announced by Drs. C. H. Sheldon and B. T. Horton, of the Mayo Clinic here.

The chemical, histamine, is used in the new treatment developed at the Mayo Clinic. Histamine acid phosphate dissolved in salt solution is injected into a vein, the injection taking about one and one-half hours.

"The first patient so treated, who had been confined to bed for a period of three weeks because of Ménière's disease, was promptly relieved of all symptoms and was able to get up immediately after the injection was stopped and walk about in a perfectly normal manner," Drs. Sheldon and Horton report.

A brain operation in which the nerve of hearing on the affected side is cut has been a successful, if drastic, method of relieving the condition completely. Medical treatment using ammonium chloride and a low salt diet has also been reported to give good results. But the "almost immediate response to treatment with histamine makes this method particularly valuable when the vertigo is of great violence and the vomiting severe," Dr. H. W. Woltman points out.—*Victor News*

Occupational exposure of hospital personnel to tuberculosis does not increase the disease or death rates except among nurses who enter training in the tuberculin-negative stage. Leopold Brahdy, M.D., Jour. of Amer. Med. Assn., Jan. 13, 1940.

At the present time the greatest need for health action is where the greatest saving of life and suffering can be made. Here I would place first, finishing the job in the control of tuberculosis. Thomas Par-ran, M.D., Surgeon-General, Hospitals, Aug., 1940.

The large number of cases of tuberculosis in the later age groups represents an accumulation which started in adolescence and early adult life. J. Burns Amberson, Jr., M.D.

A silk hat has been known to change a man's whole character. It is perhaps more responsible than anything else for the peculiar actions of the United States Senate. Nearly every senator wears a silk hat, and such an atrocity can't help affecting his mind. If all the senators would wear caps, the innovation might change the whole course of the nation's history.—*St. Clair Co. Medical Bulletin*.

THE CAUTIOUS RACE

Sandy Hoyle, negro janitor of The Advocate, listened to a discussion by the foreman and the intelligent compositor on the commercial possibilities of the aeroplane. Sandy seemed deeply interested, but at the close of the conversation, he shook his head solemnly and said:

"White folks may do great things with them flying machines, but one thing I knows fo' sutin — they won't never need no Jim Crow cars on 'em."—*Green-field Advocate*.

Original Articles

ENTERIC INTRAMURAL HERNIATION FOLLOWING COLOSTOMY

GEORGE J. RUKSTINAT, M.D.*

CHESTER B. THRIFT, M.D. AND

FRANK M. SYLVESTER, M.D.

CHICAGO

A comprehensive report of ventral hernias and prolapse as late complications of colostomy was made by Gabriel and Lloyd Davis¹ in 1935. Their study was based on 500 cases of palliative colostomy performed in 24 years at St. Mark's Hospital, London. Ventral hernias occurred in less than ten per cent. of the cases. A slightly greater incidence existed in left iliac colostomies compared with those brought out through the left rectus muscle. The largest hernias occurred when incision was made at the outer border of the rectus and when the cup variety of belt was worn by the patient. Prolapse as a late complication of colostomy existed in only 12 of the 500 cases in the series. As in rectal prolapse, it was found that a colostomy prolapse may be complete involving the entire thickness of the colon, or incomplete, involving only the mucous membrane. The eversion occurred mostly from the upper and only occasionally from the lower or both openings. The authors stated that a prolapse is "always associated with a patulous opening in the abdominal wall."

The first report of herniation of small intestine into a prolapse of the large bowel was made by Gosset². On the eighteenth postoperative day following the establishment of a left iliac colostomy, prolapse occurred in his patient. A tumor developed symmetrically at the level of the median part of the artificial anus resulting in two lateral intestinal orifices. Strangulation of small intestine into the large intestine happened after one year.

Usteri's³ and Bodé's⁴ cases included a double hernia composed of an eventration of the abdominal wall and intestine adhering to the skin containing the cecum within a peritoneal fold. Guibé's⁵ patient had a double hernia composed of small intestine herniated and strangulated into a prolapsed loop of colon at the level of the artificial anus. Eversion occurred several months

following the formation of an artificial anus. In the two instances of cecal anus discussed, the condition developed five and one-half years following operation. The prolapse commenced on the eighteenth postoperative day in Gosset's patient and, in Bodé's, developed slowly. In Usteri's patient, a small descensus was noted directly after the operation. The time of occurrence, therefore, varied. The patients were beyond 50 years of age. The types of lesions present were: cancer of the sigmoid, two; multiple pelvic adhesions, one; and syphilis of the rectum, one. A common etiology was a plethoric type of abdomen, with constipation and accumulation of a large quantity of fecal material in the large intestine.

In 1925, Greenslade and Hall⁶ reported a prolapse of the distal loop of a colostomy composed of the sigmoid for nine inches. Diverticu-

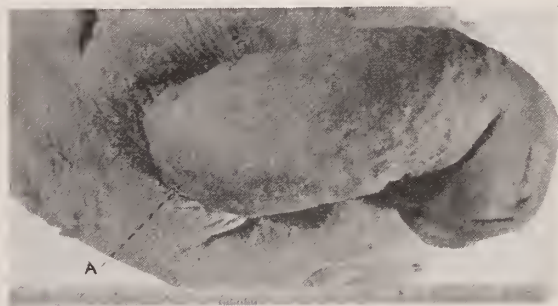


Figure 1: Gross necropsy specimen illustrating the prolapse of the colon, A, from the proximal colostomy opening.



Figure 2: Illustrating the nubbin of scar tissue adjacent to the distal colostomy opening, N. The opening of the distal colonic loop of the colostomy, C, conveyed urine to the skin surface during the acts of urination and defecation. The prolapsed proximal loop, P, has been lifted to permit visualization of the distal opening.

*From the Norman Bridge Pathological Laboratory, Rush Medical College of the University of Chicago.

litis of the colon evidently had been regarded as an inoperable carcinoma. The 75 year old patient had had a colostomy 20 years previously. The colon distal to the colostomy opening was edematous, congested, and dilated; the remaining portion was contracted and empty. The authors concluded that the tension of the distal portion of the colon initiated a retroperistaltic wave, as demonstrated by Cannon, which might cause an eversion of a portion of the mucosa, plugging the lumen of the bowel, initiating a rise in tension. In forcing a passage through this barrier of mucosa, further eversion results. In the proximal loop, normal peristaltic action facilitates sliding of the mucosa or, indeed, the entire bowel, when a relaxed abdominal wall, long mesentery, or external pressure from a colostomy

cup helps the process.

Bevis⁷ reported a simple prolapse of the proximal loop of a colostomy he had repaired. He presumed its etiology to be a long mesocolon, a freely mobile intestine, and altered innervation as a result of section of the intestine. His patient, aged 58 years, had had a left iliac colostomy for inoperable carcinoma of the rectum with metastases to the bladder and pelvic structures. Four months postoperatively, prolapse occurred and was repaired by a Mikulicz procedure.

A. Jianu, D. Théodoreseu and P. Théodoru⁸ reported a left iliac artificial anus established by the Maydl operation in a man 29 years of age with a stenosing lymphogranuloma of the rectum. They believed factors predisposing to eversion were a long mesentery which permitted

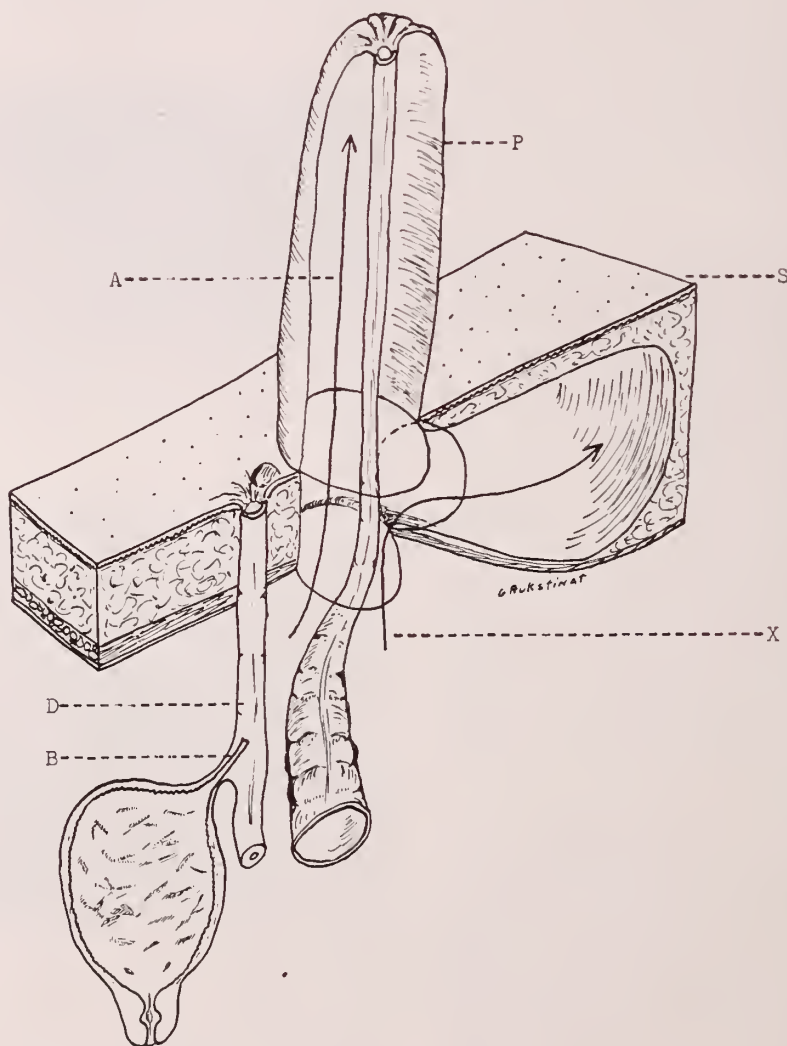


Figure 3: Schematic illustration of the skin at S, the prolapsed and evaginated proximal colostomy loop P, the distal loop D with its connection to the bladder

diverticulum at B, by arrow A, the hernial cavity occupied by small bowel in the prolapsed colon pouch and by arrow X in the intramural hernia.

evagination of the intestine with a feeble abdominal wall due to technique, and suppuration. Two other patients, one aged 63 years, with ampullary carcinoma of the rectum, and one aged 30 years with stenosing lymphogranuloma of the rectum, developed a simple prolapse through the proximal colostomy opening. Prolapse developed in each one month following operation.

Thévenard⁹ by special technique corrected an intestinal eversion in which the distal and proximal ends of the intestinal loop herniated through a left iliac artificial anus. Hall¹⁰ in 1936 attributed three prolapses through the stoma of a colostomy recurring at two year intervals, to poor cooperation, a thin atrophic abdominal wall, weak fascial structures, and wound infection. Surgical correction was by insertion of a rubber tube.

Antonoli¹¹ in 1936 reported the prolapse of the efferent colonic loop through a left iliac anus in a man 30 years of age who, when 12 years old, had had surgical intervention for fistulae of the rectum. Three years later, stenosis of the rectum required a left iliac colostomy. Four years later the mucosa of the distal colostomy loop prolapsed and became 24 cm. long. An operation similar to Mikulicz's for the rectum bore good results.

A. Jianu⁸ was indebted to Geraud, 1903, Bernard and Chaliier, Mercier, P. Mallet Guy, and E'tienne-Martin for their opinions of the etiology of prolapse through a colostomy. The predisposing and determining factors causing prolapse can be distinguished. The three predisposing elements are: (a) the length of the mesentery which permits the evagination of the intestine, by failure to attach as much as possible of the superior loop of mesentery and fix the intestine; (b) the weakness of the abdominal wall as a result of the technique employed, or atrophy as a sequel to suppuration provoked by the Reverdin apparatus; and (c) altered innervation of the intestine. Determining factors or different types of effort which may cause prolapse may be: (a) active, such as a violent effort at stool or sudden strain setting into motion peristaltic waves, or (b) passive, such as aspiration by a cup type of apparatus, weakened abdominal wall from acute or chronic inflammation, or constipation leading to retroperistaltic waves.

Anatomical forms of prolapse may be: (1)

simple, of the mucosa, with a weak abdominal wall; (2) total, of the entire wall of the colon; (3) the small bowel in the colon; (4) the strangulated hemorrhoids, an inflammatory phenomenon rare in peritonitis or gangrene of the intestine; and (5) the small bowel in the colon, associated with ventral hernia proximal to the colostomy opening and a fistulous tract composed of the distal loop of the colostomy. The latter complication, represented by our patient, as far as we could determine has never been reported before.

CASE REPORT

P.H., a white male aged 76 years, February 21, 1939, complained of scalding urine, looseness of the bowels, and occasional drops of blood in the stools which came from a colostomy opening. Three weeks prior to his first examination there had been continued soreness in the epigastrium and pain in the right upper quadrant of the abdomen. He stated that when fecal matter passed from the colostomy, "hot water ran between the flesh and the colostomy opening." He ascribed his generalized aches, pains of the muscles, weakness, and general exhaustion to two falls he had had on the right hip and shoulder before his visit. His weight had decreased from 163 pounds to 140 within one year.

The family history is interesting. His father had died at 69 years of carcinoma of the stomach; the mother at 71 years of liver trouble with complications; a sister at 54 years of diabetes mellitus; another sister at 48 years of "leakage of the heart;" and a brother aged 60 years has diabetes mellitus.

In 1915 the patient experienced no defecation for nine days and had surgical intervention for a supposed tumor of the intestines. The pelvic mass

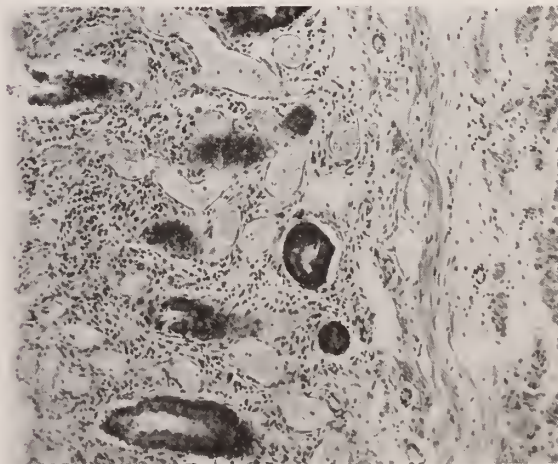


Figure 4: Illustrating at G the granulation tissue covering of the prolapsed colon; at X the remnant of a superficial gland; and at D the better preserved deeper glands.

felt at that time was not removed. A permanent colostomy was established above the involved area. In 1928, a portion of the protruding bowel from the colostomy opening was resected. In 1934 he developed diabetes mellitus and thereafter adhered to a diabetic diet. Insulin therapy never was instituted.

On admission to the Loretto Hospital, Chicago, in February 1939, he was emaciated and had a protuberant abdomen, with marked tenderness over both sternocleidomastoid muscles and enlarged discrete anterior and posterior cervical lymph nodes. The oral temperature was 99.6°F., pulse rate 92, respirations 28, and blood pressure 150/90 mm. Hg. The breath sounds in the left posterior lung fields were decreased. There were numerous râles but no dullness on percussion of either lung field. The apex of the heart was at the left anterior axillary line; the right border was 1 cm. lateral to the right sternal border. A localized systolic murmur was heard over the mitral area and apex.

The abdomen was pendulous with the proximal portion of the descending colon protruding through the colostomy opening 13 inches (32.5 cm.). Openings at the proximal and distal portions of the bowel were patent. When the bladder filled, urine passed from the distal portion of the bowel. A large indurated mass was palpated in the lower pubic region. The liver was 1 cm. below the costal arch. Induration was noted in the pyloric region. The extremities were emaciated with bilateral saphenous varicosities. The nervous system was normal except for absent bilateral patellar reflexes.

Urinalysis revealed strongly positive sugar, 4 per cent., albumin grade 2, few hyaline and granular casts, with an occasional pus cell. Roentgenograms of the pelvis revealed a distinct rarefaction through the wings of the ilia, and the ascending and descending rami of the pubis. The sacroiliac synchondrosis was normal. Arthritic changes between the first and second lumbar articulations were noted. Several areas of increased density noted through a shadow extending from above the right costal margin to a point even with the right pelvic crest, corresponded to an unusually large liver containing hard fibrous masses. In the lower pelvis a mass 3 cm. by 6 on the right aspect apparently connected with a markedly thickened bladder whose shadow extended across the entire pelvis and measured 3 cm. above the pubic crest. Above the left iliac crest a mass 3 cm. in width by 9 cm. in length extended inward 5 cm. and appeared like a thickened bowel.

Three weeks elapsed before the patient again was hospitalized with acute, cramping, upper abdominal pain. He was critically ill, extremely dehydrated, had not defecated through the colostomy for 48 hours, but had not vomited. Physical examination disclosed essentially the same findings as five weeks previously except for 100°F. oral temperature, 96 pulse rate, 24 respirations, and a large firm mass occupying the left hypochondrium to the umbilicus, on the inferior surface of which irregular nodes were palpable. This

mass moved downward with respiration. Urinalysis was the same as at the first visit. Erythrocytes numbered 3,760,000; leukocytes 15,900 per cu. mm. of blood. The differential count was 92 per cent. neutrophils, 2 per cent large mononuclears, 1 per cent. mast cells, 5 per cent. lymphocytes, and 1 per cent. normoblasts. Carcinoma of the liver and stomach, and obstruction of the transverse colon were diagnosed.

The poor condition of the patient despite blood and saline transfusions precluded surgical intervention for two days. Then an upper abdominal incision revealed extensive carcinoma of the liver, pylorus, and gall bladder. Severe trauma and resulting plastic adhesions with involvement of the lymph nodes had caused an obstruction to the transverse colon 10 cm. from the beginning of the hepatic flexure. Due to the extent of the abdominal involvement, an ileocolic enterostomy was performed and the abdomen closed without drainage. On the first postoperative day there was flatus; serous fluid passed through the colostomy. The following day a dark brown liquid defecation occurred. The patient, however, became progressively weaker, developed a hypostatic bronchopneumonia, and expired on the second postoperative day.

The pertinent anatomic diagnoses were: hypostatic bronchopneumonia; primary carcinoma of the tail of the pancreas; generalized carcinoma metastases of the liver, peritoneum and biliary lymph glands; old cholecystostomy; marked extrusion of the proximal colostomy loop; herniation of the small bowel intramurally of the abdomen about the colostomy and into the protruding proximal colostomy loop; vesicocolic fistula. One midline laparotomy scar was 9 cm. long, with its upper end at the navel level. Its lower end was 15 mm. broad at the site of drainage. There was an oval scar on the left side of the abdomen 5 cm. vertically and 3.8 cm. across. Through the middle of the scar protruded a mass 17 cm. long and 7 cm. in its greatest diameter (Fig. 1). It was slightly rough outside as from fibrin. Its smooth free end had an opening that resembled an elephant's trunk. Extending medially from the scar next to this mass was an outpouching 18 mm. high, 18 mm. across and 10 mm. wide, the lateral two-thirds raised about 4 mm. above the surrounding scar. The medial one-third was depressed. A recent curved laparotomy wound was 19 cm. long, its upper end 1 cm. to the left of the midline and 6 cm. superior to the navel. This curved to the right downward, from the navel to 4 cm. to the right of the midline.

The front edge of the liver was free; tumor nodules studded at least half of the front surface. Several nodules 12 mm. in diameter were umbilicated. The great omentum was adherent by fibrinous adhesions to a line of sutures in the bowel wall. The bowel sutures involved the terminal part of the ileum and cecum.

In a hernia of the abdominal wall was a loop of small bowel 17 cm. long (Fig. 3). When the loop was removed, the trunklike protrusion from the abdominal

scar became limp and soft. The terminal part of the trunk was formed by the descending part of the colon, with its lumen narrowed to 12 mm. before its exit through the skin. Several coils of small bowel 36 cm. long occupied the interior of the trunk and easily were removed. Their course paralleled the proximal loop of the colostomy whose opening was about 4 cm. proximal to the end of the trunk.

On the inside of the laparotomy wound in the vicinity of the recent bowel suture was a recent fibrino-purulent exudate. Extending from the little nubbin of tissue (Fig. 2) medial to the protrusion on the skin was a fistulous tract which ran inward and downward about 8 cm., made a right angle, and proceeded posteriorly. The tract was composed of large bowel whose lumen was 2 mm. in diameter and entered with difficulty (Fig. 3 and 4). The bowel wall followed upward from the rectum was up to 6 mm. thick and heavily coated with fat in the vicinity of the urinary bladder. The most distal of the two right angles formed in this tract was due to adhesions between the sigmoid part of the colon (Fig. 5) and the loop of the small bowel. A funnel-shaped pucker in the fundus of the urinary bladder medial and anterior to the left ureteral orifice continued through the bladder wall to empty into the colon. Distal to the opening between the urinary bladder and large bowel the tract contained coarse rugae and the lumen was blocked with a mucous plug.

Histologically, the pancreatic tumor was a typical adenocarcinoma composed of acinar cell types. The metastases in the liver, peritoneum, and lymph glands were fairly consistent reproductions of the original tumor. The mucosa lining the prolapsed portion of colostomy contained normal abundant mucous glands and lymph follicles. The covering of this part of bowel was mucosa in which about one-fourth the normal glands occurred at irregular intervals. The regions of granulation tissue between them explained the pebbled red external appearance of the bowel (Fig. 4).

SUMMARY

There are reports in the literature of ventral hernias complicating colostomies, but none of the combination of ventral hernia and prolapse through a colostomy in the manner here detailed.

Four late postoperative complications of colostomy are illustrated, namely, prolapse of the proximal loop of the descending colon, hernia of the small intestine into the loop of colon, a ventral hernia containing loops of small intestine proximal to the colostomy opening, and a fistulous tract composed of the distal loop of the descending colon connected with the bladder and opening on the skin adjacent to the colostomy opening.

BIBLIOGRAPHY

1. Gabriel, W. B., and Lloyd Davis, O. V.: Colostomy, *Brit. J. Surg.* 22: 520-538, 1935.
2. Gosset: La thèse de son élève, Paris 1902.
3. Usteri: Ein seltener Fall von Inkarceration einer Dunndarmschlinge im Prolaps der hinteren Darmwand einer Cöcumfistel, *Deutsche Ztschr. f. Chir.* 103: 167, 1909.
4. Bode: Incarceration einer Dunndarmschlinge in der prolabierten Darmwand eines Coecalalters, *Beitr. z. klin. Chir.* 74: 425, 1911.
5. Guibé, M.: The strangulation of the small intestine in prolapse of large intestine through artificial anus, *Rev. Chir.* 51: 138-161 and 279-301, 1916.
6. Greenslade, C. M., and Hall, F. J. S.: Prolapse of gut distal to colostomy, *British M. J.* 1: 921, 1925.
7. Bevis, E. M.: Prolapse of the colon through a colostomy opening, *Northwest Med.* 26: 213-214, 1927.
8. Jianu, A.; Théodoresco, D., and Théodoru, P.: Prolapse of left iliac anus, *Gaz. d'hop.* 107: 153-154, 1934.
9. Thévenard: Intestinal prolapse of protrusion of distal and proximal ends of intestinal loop through artificial anus; obstruction; surgical therapy and apparatus for making anus continent, *Bull. et mém. Soc. d. chir. de Paris* 27: 487-488, 1935.
10. Hall, W. E. B.: Recurrent prolapse through stoma of a colostomy, *Ann. Surg.* 104: 477-478, 1936.
11. Antonioli, G. M.: Prolapse of efferent colonic loop through left iliac anus; pathogenesis and therapy; case, *Policlin. (sez. prat.)* 43: 630-638, 1936.

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THE RELATION OF MECKEL'S GANGLION TO ACCOMMODATION AND INTRAOCULAR TENSION

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Please permit me to express my appreciation for the honor you have conferred on me by inviting me to the 100th Anniversary meeting of the Illinois State Medical Association. My first contact with the medical profession of Illinois occurred some 64 years ago. It was an Illinois doctor who met the stork at that time. That busy bird may have been puzzled somewhat by interstate boundaries. He left me at the extreme western border of this state on the eastern bank of the Mississippi River at Warsaw, Illinois, within a mile of Missouri and within two miles of Iowa. Warsaw was then the western terminus of the Toledo, Peoria and Warsaw R. R. Hence, it was not strange that my first visit to a great city was a trip on that railroad to Peoria, about 1885. Not having visited Peoria in the interval, I would have been tempted to crash the gates of this meeting if you had not invited me.

The subject of this discussion might be paraphrased to read "An inquiry into the etiology of

simple chronic glaucoma and spasm of accommodation with suggestions for rhinological assistance in the successful treatment of both conditions." The universal routine treatment for the control of simple chronic glaucoma is to produce ciliary spasm by the use of myotics. There is no drug which contracts the pupil that does not also cause contraction of the ciliary musculature. Then why should local anesthesia of the region of Meckel's ganglion stop a most severe accommodative spasm and also reduce intraocular tension in glaucoma?

For better understanding let a few reminiscences trace in the background for certain clinical observations.

Medical research has created such a vast volume of detailed information that no individual physician can possibly grasp the significance of it, much less become a master in all special lines. Hence, modern research and practice has perforce taught the importance of team work in every department. Cooperation in sight-saving between the rhinologist and the ophthalmologist has been studied and practiced more in recent decades than in all the preceding centuries. The first edition of the Graefe Samisch *Hanbuch für die Gesammte Augenheilkunde* when published about 1875 was a truly comprehensive treatise in seven volumes of all that was known about ophthalmic science and practice. The only two references to the nose in its index except in lachrymal duct disease pertained to nosebleed (*Nasenbluten*) in Basedow's disease and to the sunken nasal bridge of congenital syphilis. The *Encyclopedie Francaise d'Ophthalmologie* published thirty years later had more than a double column index page of references to diseases of the nasopharynx. The last thirty years have served to extend and coordinate the knowledge of the etiological relations of diseases of the nose and throat to ophthalmology in an astounding manner. More remains to be accomplished and many observations are a challenge for a better understanding of their precise significance.

It was my good fortune to become an assistant nearly forty years ago in the offices of the late Drs. John Green, M. H. Post and A. E. Ewing when the latter began referring patients with unexplained frontal headaches and even ocular pain to Dr. Greenfield Sluder who brought relief to many of them by nasal treatment. Often active disease of the nasal sinuses could be demon-

strated. Sometimes the relief seemed to be related directly to shrinking of the nasal mucosa even when no lesion was apparent. Thus consideration of nose and throat diseases in ophthalmic practice became my obligation from the very beginning.

Dr. A. E. Ewing's pioneer work in this relation between ophthalmic and rhinologic practice is properly recognized by giving the name "Ewing's point" to that region of bony tenderness usually discoverable in these cases by moderate pressure of the finger in the upper inner (or nasal) angle of the orbit. Ewing's point is as significant in ophthalmology as is McBurney's point in its relation to appendicitis.

Two cases, because of certain dramatic incidents, stand out in my memory as striking illustrations of the value of recognition of tenderness at Ewing's point. They might be called the Missouri and Illinois cases because the young man came from Jefferson City and the young lady resided in Springfield, the capitols of our neighborly commonwealths, more than thirty years ago.

The young man suddenly lost his vision that morning in both eyes after a week of severe headache. After a few minutes vision was restored in the right eye but the left remained practically blind. Ocular examination revealed no reason for the loss of vision. The ocular fundus was normal and the media were normally transparent. The only diagnostic sign was the exquisite tenderness at Ewing's point. Nasal examination by Dr. Greenfield Sluder was almost negative showing only some acute swelling of the left turbinates but no tell-tale secretion. One-third of a century ago, x-ray technique was not sufficiently perfected to be dependable in the diagnosis of nasal sinus diseases. Anyway, it was too late in the day for another examination, so the patient was sent to St. Luke's Hospital for the night with Dr. Sluder's instruction for the frequent use of an alkaline nasal wash. About five o'clock the following morning a quantity of pus and blood was discharged from the nose and when the patient returned to the office for re-examination at 9 a.m., his vision was restored to normal in the affected eye. Subsequent nasal treatment made the recovery a permanent one. The case was reported by Dr. Sluder and myself to the Washington University Alumni Association as the first encountered of its type.

The young lady from Illinois had an apparent neuroretinitis in the right eye. The numerous small retinal hemorrhages and white fibrinous patches of exudates at the posterior pole strongly suggested nephritic disease. As tests revealed albumen and sugar in the urine, it is not astonishing that the eye physician who first saw this patient had given a distressingly grave prognosis as to life as well as to eyesight. However, the left eye was normal and Ewing's sign was positive on the right side. That induced questions about previous nasal disorders which revealed that she had had repeated bloody and purulent discharges from the nose and that she had been told two years before that there was an obstruction in the right side of the nose that should be removed. Nasal examination by Dr. Sluder revealed a right sphenoidal empyema. Nasal treatment provided the means for a complete recovery of the right eye. It also put an end to the apparent nephritis and diabetes.

It is easy to understand how sphenoidal empyema might cause a low grade nephritis, but whence came the glycosuria? Why should the sugar disappear from the urine when the sphenoidal sinus was drained? Perhaps your second thought has answered this question. Its probable explanation becomes apparent when the thin bony wall between the pituitary body and the sphenoidal sinus is remembered. Direct irritation of the pituitary gland by the sphenoidal inflammation readily accounts for the appearance of the glycosuria and its disappearance was promptly coincident with proper nasal treatment. The good prognosis given to this patient after nasal treatment has been confirmed by the fact that she has retained life and good vision throughout the thirty years that have passed since the incidents happened which are here reported.

These cases impress the significance of Ewing's sign when little diagnostic evidence is available as in the Missouri boy, but also that Ewing's sign must not be disregarded when laboratory tests seem to establish a different diagnosis as in the Illinois girl. These two cases emphasize the ophthalmic risk from inflammations in adjacent structures, but clinical experiences show that there are often less direct and less understandable influences of nasal origin involving ocular structures or functions.

Priority may be conceded to Berger and Tyr-

mann for their publication in 1886 in Wiesbaden, Germany, of a treatise on diseases of the sphenoidal sinus and the ethmoidal labyrinth and to Berger in his *Thèse de Paris* in 1890 for calling attention to maladies of the nasopharynx in relation to ocular diseases.

The same author, Berger, in 1905 in the *Encyclopédie Française d'Ophthalmologie* wrote a comprehensive chapter on the relation of nasal and ocular disorders. He stated that "among the symptoms accompanying affections of the nasal fossa which we attribute to the trigeminus, it is necessary to mention pain in the eyeball or orbit, sensation of a foreign body in the conjunctival sac, photophobia, epiphora, blepharospasm, in certain cases episcleral and conjunctival hyperemia, troubles of accommodation, asthenopia, contraction of the visual field with occasional amblyopia, hypertension causing attacks of glaucoma." In connection with the latter Berger refers to Cheatham and Lennox-Brown, but fails to specify date or place where Cheatham's or Lennox-Brown's dissertations may be found.

Until the last decade, the relation of nose and throat conditions or diseases to ocular diseases or functions might be comprehended by (a) retrobulbar inflammation or pressure; (b) reflex nerve impulses; (c) vasomotor disturbances; (d) bacterial infections or toxins. Since then various allergic ocular reactions have been noted which apparently originate in the nose and throat. Perhaps this allergy may be included among the vasomotor or toxic effects of the earlier classification.

Our discussion concerns reflex reactions on intraocular pressure and accommodation originating in the region of Meckel's ganglion (also known as the sphenopalatine ganglion or nasal ganglion). American rhinologists and ophthalmologists were introduced to many phases of these interrelations by the joint work of the late Dr. Greenfield Sluder and Dr. A. E. Ewing. Dr. George Dock in 1929 read a paper on "Sluder's Nasal Ganglion Syndrome and Its Relation to Internal Medicine" before the Section on Practice of Medicine of the American Medical Association. After referring to Sluder's publications beginning in 1908, etc., George Dock stated, "For a time the subject did not excite the curiosity of the Old World but it was then taken up with enthusiasm by French rhinol-

ogists who have made interesting contributions meeting not a little criticism from some of their compatriots. Belgian, Dutch and German rhinologists have also contributed to the anatomic and clinical problems involved, stimulated by what Goldsmith-Osmond calls the 'ausgezeichnete Beobachtungen' of Sluder." Dock adds "Certain eye symptoms were early reported; in fact, Sluder acknowledged his introduction to the subject by the late A. E. Ewing, who had Sluder relieve the pain of glaucoma by cocaineization of the nasal ganglion." This followed after the earlier attempts to stop intractable headaches.

Various pains about the head were stopped by Sluder's cocaineization of the nasal ganglion. Dock's statement is that "Earache may be present, referred to the mastoid region with a tender point 5 cm. back of that. Not a few such patients have had mastoid operations with negative results." This was fully confirmed in a recent personal discussion by Dr. W. E. Sauer. No doubt most Ear, Nose and Throat specialists agree with G. E. Shambaugh who advised the therapist to "search out and eradicate any existing focus of infection and resort to local treatment of the ganglion only when neuralgia was not relieved by other measures."

In his recent talk on Medical Quackery at St. Louis, Dr. Fishbein called attention to the perversion of Sluder's work by a Spanish healer who treated all manner of diseases without diagnostic differentiation by topical applications to the nasal ganglion. However, Doctor Dock's conclusion that "Sluder's work has not only led to much benefit in practice but has opened up a large field for investigation" is a clear challenge for repeating such discussions as the present one.

Results of Sluder's topical applications in the region of the ganglion were inconstant both as to pain and pressure, but the fact that any effect on the ocular disease could be observed, raised questions which precipitated further researches which may have much significance for future therapy in glaucoma. Investigation of the anatomical and functional relations of Meckel's ganglion made by Kuntz, Director of the Department of Micro-anatomy and author of the notable work "The Autonomie Nervous System," and Christensen, Assistant Professor in the same Department, produced information which L. W. Dean, Sluder's successor at Washington University believed provided an explanation for the reactions

which followed Sluder's treatment.

Dr. J. F. Hardesty's coordination of available clinical evidence with the researches of Kuntz and Christensen appeared to permit the conclusion that it was the general systemic absorption rather than the local effect of the sympathetonic drugs used in applications to or injection of Meckel's ganglion. Hardesty consistently secured reduction in intraocular hypertension by hypodermic injections of adrenalin without reference to the location of the site of injection. Hardesty noted similar results with oral administration of ephedrine or systemic alkalization. However, recently continued observations indicate that a better approach for anesthesia of Meckel's ganglion may be found through the posterior palatine foramen; and that better results may follow the use of this technique. They indicate that there is an effect on intraocular hypertension originating in the region of Meckel's ganglion when novocain solution is injected there through the posterior palatine canal that is not related to the general absorption of the drug. The reaction is similar and possibly safer and more enduring than the reduction in intraocular tension which follows orbital (retrobulbar) injections of novocain.

The first patient on whom the direct injection of novocain was used was a 19 year old, white, CCC enrollee, who had binocular simple chronic glaucoma worse in the right eye. Central vision was 20/40 R.E. with — 1.25 Sph. and 20/20 L. E. with — 0.50 Sph. The field of vision of the right eye was almost limited to a part of the upper temporal quadrant while for the left eye the outline of the field was normal. The disks appeared to have a glaucomatous cupping superimposed on deep physiological cupping; Schiotz tonometer reading was 45 mm., right and left. A drop of 1 per cent. solution of pilocarpine (alkaloid in oil) was instilled in each eye every hour and ephedrine sulphate gr. 3/8, t.i.d., by mouth was prescribed. Two days later, vision had improved to 20/30+ right and 20/15 left with correction. Schiotz tonometer reading was R.E. 35 mm., L.E. 28 mm. Physostigmine (alkaloid) in oil 1/240 was instilled in each eye and one hour later the Schiotz tonometer reading was 19 mm. for each eye. Instillations of physostigmine 1/2 per cent. solution in oil for each eye, every three hours was ordered. Treatment was thus begun August 7, 1938, and varied according to indications. It was noted, for example, that coffee seemed to increase intraocular pressure and coffee was eliminated. By September 25, central vision had improved to 20/15+ with correction for each eye but repeated relapses of intraocular hypertension and further loss in the visual fields seemed to make surgical intervention imperative.

Because of jurisdictional control he was transferred to Chicago where two months later an Elliott trephining and iridectomy was done on the right eye. The patient was returned to the St. Louis Marine Hospital on December 16, 1938, three weeks after the operation, because his vision was worse and intraocular pressure seemed as high as before. Vision which with correction had been 20/15 for each eye before the patient went to Chicago had dropped to 20/40 with correction in the eye operated on. In the left eye, which was not operated on, vision was 20/15 with correction. Schiotz tonometer reading was 45 mm. for each eye. Further loss in the area of the visual fields was noted for each eye.

After instillation of adrenalin 1/10 per cent., physostigmine 1/240, in each eye, the pressure dropped to 23.5 mm. for each eye. Frequent regular ocular medication at the hospital by instillation of adrenalin 1/10 per cent. closely controlled and followed by physostigmine 1/2 per cent. gave immediate satisfaction but not sustained reduction of intraocular tension. Hypodermic injection of splenic extract were harmlessly ineffective in this patient. Ephedrine orally seemed to be helpful for a time.

The proposal to test the possible effect of anesthesia of Meckel's ganglion by topical application according to Sluder's technique brought the suggestion from Drs. Jackson and Wikler of the U. S. Marine Hospital staff that novocain injection via the sphenopalatine canal as used in dental anesthesia be substituted. They explained that the needle could easily be carried higher than usual for dental purposes into the region of the ganglion. On December 21, an injection of 2 cc. of novocain 2 per cent solution was made at a depth of 1 3/8 inches using a 25 gauge hypodermic needle on each side. After the first injection vision improved 20/30, right and 20/12 left, and Schiotz tonometer reading was 20 mm. right and left. Continuing local instillations of epinephrine 1/10 per cent. immediately followed by eserine 1/2 per cent. for two days, the tonometer reading was 15 mm. right and 18 mm. left.

Then we tried the injection of novocain solution 2 per cent into the right sphenopalatine ganglion and alcohol into the left ganglion on December 23. You may recall that Sluder sometimes used injections of alcohol "to block" the sphenopalatine ganglion. On the following morning (December 24) central vision was 20/20 right and 20/12+ left, and the tonometer reading was R.E. 17 mm., L.E. 22 mm. Thus the subsequent reduction of intraocular tension was somewhat greater on the right side where the novocain solution had been injected into Meckel's ganglion than on the left side where alcohol had been injected. The patient went home for Christmas with instructions to continue adrenalin 1/10 per cent. and physostigmine 1/240, locally, every three or four hours. When he returned his tonometer reading was 18 mm. right and 17 mm. left.

These results vindicated the new mode of injection of the sphenopalatine ganglion via the posterior palatine foramen. While in the hospital under regular

treatment repeatedly day and night, the intraocular hypertension was controlled and the outline of the field of vision was increased by 50 per cent. After injection of Meckel's ganglion, intraocular pressure could be maintained at a normal level for two or three weeks by the regular use of myotics in this patient. Then another injection of 2 cc. of 2 per cent novocain would again bring down the hypertension.

The vision was better in the eye not operated on but tonometer readings were often somewhat lower in the iridectomized eye. Because of the impaired vision after iridectomy on the right eye, surgical intervention in either eye was approached with caution, but recurrences of hypertension as soon as the frequent day and night treatment was relaxed indicated that something must be done. Otherwise, this young man was practically condemned to lifelong hospitalization.

Blepharitis, styes, and conjunctival infection contributed to a delay of several months before the actual undertaking of surgical intervention. During the waiting period various modifications of medical care were tried out. Details must be omitted. Regular local treatment with adrenalin controlled by myotics gave the best results when supplemented by injections of novocain into the region of Meckel's ganglion through the sphenopalatine canal.

Finally, on June 17, 1939, after several sterile conjunctival cultures had been obtained from the right eye which had been trephined and iridectomized, the subconjunctival winged keratome incision with clipping off of several millimeters from the corneal lip of the wound was made. No additional intraocular surgery was attempted. It was planned merely to add the benefit of the vacuolated filtering scar with corneal osmosis to the previous iridectomy. In doing so the trephine opening completely closed by a firm scar was discovered disclosing the reason for the failure of the former operation.

One week after this operation on the right eye, the tension as measured by Schiotz tonometer was only 2 mm. The left eye which was not operated on was under constant treatment and remained at 19 mm. At the end of the second week after the operation, the hypotony of the eye operated on had ceased. The Schiotz tonometer reading was right eye 18 mm. and left eye 22 mm.

The successful somewhat safer reduction of intraocular tension by this type of incision has in our experience repeatedly demonstrated its superiority over the usual trephine opening. Both are done under a large conjunctival flap. In this instance, there was no modification of the previous iridectomy. That part of the earlier operation was left untouched.

Because of its success on the right eye, the patient readily consented to having the same operation done on the left eye. On November 2, 1939, my son, Dr. Philip S. Luedde, operated on the left eye following the same technique which he had used on the right eye 4 1/2 months earlier with the addition of a basal iridectomy. The first tonometric reading on the left eye made eight days after the operation showed an

intraocular tension of 11 mm.

On December 18, 1939, when this patient was discharged from the U. S. Marine Hospital the tonometric reading was 20 mm. right and left. The patient was instructed to use adrenalin 1/10 per cent. followed at once by physostigmine 1/240, one drop in each eye, night and morning. He was seen three times after leaving the hospital and the tension remained at 18 mm. right and left as long as he continued his prophylactic treatment. If it is reasonable in preglaucomatous states to instill pilocarpine or even eserine once or twice daily, the same prophylaxis can be used advantageously after any surgical intervention for glaucoma.

The honors of the first use of the posterior palatine foramen for injection of Meckel's ganglion for glaucoma belong to Fritz R. Jackson, Passed Assistant Dental Surgeon and Abraham Wikler, Assistant Surgeon (R) U. S. P. H. S., on the Staff of the U. S. Marine Hospital of St. Louis at that time. Their technique is described in *Hospital News*, Vol. 6, No. 10, May 15, 1939 (Issued by Division of Marine Hospitals, etc., U. S. Public Health Service). Dr. Jackson reported that he had used injection of the posterior palatine canal more than 200 times for dental purposes. He stated that "in the presence of all the molar teeth, the posterior palatine foramen can usually be found at the level of the distal cusp of the second molar tooth, at or near the junction of the alveolar process and palate. A more precise localization of the posterior palatine foramen may be made as follows: Draw an imaginary line on the hard palate, parallel to the median raphe, bisecting the palatal half on the side to be injected; then draw another imaginary line at right angles to the first, between the second and third molars on either side. The foramen is located at or near the intersection of the two lines (figure 1). A 15/8 inch 25 gauge hypodermic needle, with the safety stop set at 1 1/2 inches from the tip, is used with a pressure syringe. In some cases the posterior lip of the foramen can be palpated; and in these cases there should be little difficulty in making the injection."

"The mucous membrane overlying the posterior palatine foramen can be painted with tincture of metaphen or tincture of iodine. It may then be superficially anesthetized by applying a sterile cocaine solution (10 per cent.) or the technique described by Jackson and Wikler may be followed in detail. The area is then infiltrated locally, and, with the syringe held like a pen,

the region is probed until the tip of the needle is felt to enter the posterior palatine canal. Then, with the syringe held parallel to the teeth, the needle is gently inserted up to the safety stop, injecting a few drops all along, the full 2 cc. being given. In some cases it may be impossible to perform this injection because of bony spicules, tortuosity, or other anomalies of the canal."

"The first symptom noted by the patient in a successful injection is usually numbness of the corresponding half of the upper lip and the nostril on the same side. This may spread to include the entire distribution of the maxillary nerve on the face, depending on the relative depth of the injection. According to E. H. Campbell, who studied 50 skulls and 15 wet specimens, 'the distance from the palatal surface to the level of the maxillary nerve was from 4.2 to 5.4 cm., or an average of 4.7 cm.'"

"In specimens injected with staining fluid at various distances, the same author found that the ganglion was saturated even at a depth of 3.5 cm., although the maxillary nerve (with which we are not concerned here) did not stain regularly. At a depth of 4 cm. Campbell found that 'the maxillary nerve was saturated in every instance as well as the ascending branches, the posterior branch, the ganglion proper, the vidian nerve, and the descending branches . . . the stain spread up the fascia around the ascending branches to reach the under surface of the orbital tissue, but the fluid did not penetrate into these tissues and did not come nearer than 0.75 cm. to the optic nerve or the ophthalmic division of the fifth.' It is to be noted, however, that these figures were based on the injection of only 1 cc. of staining fluid. It seems evident, therefore, that using 2 cc. of fluid, it is not necessary to insert the needle more than about 3.0 or 3.5 cm. to infiltrate the sphenopalatine ganglion along."

Careful search has failed to show any direct connection between Meckel's ganglion and the eye, but a large bundle of sensory (centripetal) fibers pass the ganglion. Their peripheral distribution includes most of the Schneiderian membrane. It may be that blocking those fibers by the

*(Campbell, E. H.: Anatomic studies of the sphenopalatine ganglion and the posterior palatine canal, with special reference to the use of the latter as the injection route of choice. *Trans. Am. Laryn. Rhin. and Otol. Soc.*, (35): 118-128, 1929).

injection of novocain solution breaks a reflex arc that can influence intraocular circulation. Immediately after the injection the patient is usually conscious of its anesthetic effect on the nose and sometimes of immediate improvement of vision.

Several times the onset of simple chronic glaucoma has been noted in the wake of retrobulbar nerve or retinal damage from nasal sinus disease. Repeatedly, improvement in the visual field in cases of chronic glaucoma has followed the appropriate treatment (medical and surgical) of pathological conditions in the nasal fossa.

It is impossible to make a positive statement that "post hoc" equals "propter hoc" but a sequence such as the one recently noted, in one of his patients, by my son, Dr. Fullerton W. Luedde, is highly suggestive.

A man (P. W.) aged 62 years, presented a mild simple chronic glaucoma. Regular daily instillation of a pilocarpine solution sufficed to bring the intraocular hypertension down to normal limits and to maintain good visual acuity and normal visual fields. Gradually, as everyone has noticed in such cases, the frequency of the pilocarpine instillations had to be increased to four or five times daily. This patient had been a chronic sufferer from the annoyances which attend marked deflection of the nasal septum and he was persuaded to have this deformity corrected. The result of the septum operation performed by Dr. F. C. Simon was not only the elimination of his nasal disturbance but his intraocular tension has remained well within normal limits for many months, when only a single instillation of pilocarpine is used at bedtime. Even this might be omitted but the prophylactic use of a single drop of pilocarpine solution at bedtime in such patients is a practice that can hardly be commended too highly.

The reduction of intraocular tension by the injection of 1 or 2 cc. of a sterile 2 per cent. novocain solution into the region of the sphenopalatine ganglion is not proposed as an ultimate substitute for the more lasting surgical reduction of intraocular hypertension but it may enable the surgeon to select the most favorable conditions for such an operation.

While preparing this paper, a young man at the U. S. Marine Hospital suffering from a sympathetic ophthalmia in which atropine had been used regularly at frequent intervals daily for the control of the severe iridocyclitis, suddenly developed a glaucomatous hypertension with steamy cornea and loss of visual acuity. Injection of 2 cc. of novocain solution into the region of the ganglion brought intraocular tension down from 56 mm. Schiotz to 40 mm. The injection was repeated on the following morning and

his intraocular tension was brought within normal limits. The patient stated that he was conscious of marked improvement of vision within 15 minutes after the injection made by Dr. L. E. Clawson, dental surgeon, via the posterior palatine canal. It is quite likely that surgical reduction will be required later for this patient's inflamed left eye, but just at this moment an empyema of his left antrum was revealed by x-ray examination and confirmed by surgical drainage. It is unquestionably to the best interest of this patient, whose blind injured exciting right eye was enucleated two months ago when he came in with a fulminating attack of sympathetic uveitis, to use every precaution in preparing for the surgical opening of his severely damaged sympathizing eye.

Whatever assistance injection of Meckel's ganglion can offer is a welcome addition to the therapeutic armamentarium in such cases. It is probably more effective in the presence of actual disease in the nose or accessory sinuses. That medication applied or injected into the immediate proximity of the sphenopalatine ganglion may influence intraocular tension has been demonstrated repeatedly. The detailed story of one case is more instructive than statistics. The reflex action probably reaches the sympathetic fibers which possess some vasomotor control of the vascular network of the ciliary processes.

How is accommodation concerned in this reflex arc? If the capacity of accommodation can be influenced by nasal reflexes, the time has indeed arrived when the eye physician must recognize unsuspected interlocking reflex possibilities. The necessity for comprehensive preliminary medical education for all who would save eyesight even by mechanical adjustments becomes apparent.

According to Rasmussen, "The accommodation reflex passes from the retina largely to the visual cortex and back to the superior colliculus, thence to the nucleus of the oculomotor nerve and out through this nerve to the ciliary ganglion. Here a synapse takes place and fibers arise which pass into the eyeball over the short ciliary nerves." The centrifugal impulses to the ciliary muscle are carried by parasympathetic fibers. Physiological and pharmacological research has demonstrated that the sympathetic innervates the dilating muscular fibers of the iris and also furnished some fibers to the sphincter of the pupil. These latter fibers apparently serve as a control or resistance to the parasympathetic stimuli that produce myosis.

No evidence exists that a similar dual, sympa-

thetic and parasympathetic control as is found in the iris, the heart muscle, and certain viscera, is present in the ciliary musculature, although it had been theoretically surmised. Sympathetic fibers known to be distributed to the ciliary body seem to supply only the vascular and secretory functions. In order to affect the accommodation, the reflex must travel to the eye along parasympathetic nerves through the ciliary ganglion.

Only one case is presented in which this reflex was apparently responsible for an unusually high degree of ciliary spasm. The favorable reaction to topical anesthesia of Meckel's ganglion was so striking as to leave little doubt about the clinical possibility of such a reflex. Reflex origin may be suspected in milder transient conditions of ciliary spasm or astigmatic accommodation, but they are usually so evanescent that possible origin of the reflex in the region that can be blocked at Meckel's ganglion is very difficult to trace.

Excessive accommodation may be a physiological response of the ciliary muscle to secure better vision in ametropia. When visual acuity is improved by contraction of the ciliary muscle, it must be regarded as a normal exercise of that function, though it exceeds requirements for emmetropia.

The term ciliary or accommodative spasm should be reserved for those more rarely encountered cases in which the excessive contraction of the ciliary muscle achieves no helpful purpose, but causes marked impairment of vision. True spasm usually is bilateral and of central or reflex origin. It has been reported as a part of an hysterical syndrome and as a traumatic neurosis. It is only temporarily relieved by cycloplegia.

Localized ciliary spasm may be produced by the instillation of solutions of eserine or pilocarpine. Hess declared the high measurements for accommodative spasm (13 to 18 diopters) after eserine, even in elderly persons, obtained by Lang and Barrett to be utterly incomprehensible. This is true if one holds to the hypothesis of Helmholtz for interpretation of accommodation. But it becomes entirely feasible when considered in relation to the natural physiological process of external modeling of the lens. Similarly, accommodative lenticular astigmatism which has been experimentally produced in cats' eyes, is easily

explained with the latter comprehensive concept of the mechanism of accommodation.

Spasticity of the ciliary muscle involving one eye only has been reported also as occurring after ocular injury. A degree of secondary ciliary spasm and ciliary pain may be associated with spasm of the sphincter of the iris incident to corneal injury, ulceration, or infiltration. It can effectively be corrected by instillation of atropine solution.

The earlier history of our unique patient was reported by Dr. W. H. Crisp to the Colorado Ophthalmological Society, March 17, 1923. She was at that time under general treatment at a sanitarium in Denver, Colorado. She complained of attacks of defective vision which had recurred by spells for two years with increasing frequency, more particularly after much reading. Dr. Crisp found that a retinoscopic reflex simulated a myopia of 5 D. in the right eye and 7 D. in the left.

After eight instillations of atropine in three days, Dr. Crisp prescribed:

R. E. + 1.25 Sph. + 0.37 Cyl. Ax. 180°

with vision 5/4

L. E. + 1.12 Sph. + 0.25 Cyl. Ax. 180°

Three days after the atropine instillations ceased her vision with correction was less than 5/60 and retinoscopic examination showed distinct return of spasmodic pseudomyopia.

On October 20, 1923, after she had returned to Missouri, this patient Miss L. D., a school teacher, aged 21 years, reported for ocular examination on advice of her physician in St. Louis because she had had irregular spells of severely blurred vision. She presented a letter from Dr. W. H. Crisp which stated that he regarded her condition unique in the amount and constancy of accommodative spasm. She was now wearing

R. E. and L. E. + 0.75 Sph. + 0.50 Cyl. Ax. 180° which had been prescribed by Dr. C. M. Sneed of Columbia, Mo. With these glasses her vision would vary at times from 16/200 to 16/12.

Ophthalmoscopic examination revealed no abnormal condition in fundus or media. By trial case, without cycloplegia, measurement of her refraction was the same for each eye: + 1. Sph. + 0.37 Cyl. Ax. 180° and vision with this correction equalled 16/12+. She could read comfortably with this correction except during intervening transient spells of ciliary spasm. A Maddox-rod test indicated an esophoria of one inch at 16 ft.

A nasal examination was advised to eliminate a possible reflex irritation from that region. Her physician selected Dr. Greenfield Sluder for this examination. Dr. Sluder found a double sphenoiditis and anesthetized the region of Meckel's ganglion producing complete cessation of ciliary spasm and its attendant impairment of vision for the almost unbelievable period of six years.

At any rate, that was her report when seen again February, 1929, at which time an increase in the correction of her horizontal astigmatism was indicated and accordingly + 1.25 Cyl. Ax. 180° for each eye was prescribed, with which her vision was 20/15 for each eye.

No disturbance was encountered at this time from the ciliary spasm, but nine months later these symptoms returned in an aggravated form.

She reported on December 6, 1929, that for a few days the eyes had become unsteady and that "vision blurred out entirely" at times. With her own glasses, vision varied from 20/20 to 20/200 with either eye. An addition of - 0.50 Sph. was of doubtful benefit. Visual fields were symmetrically contracted. On ophthalmoscopic examination a view of the ocular fundus was obscured at times, but could be cleared up readily by the use of concave lenses in the ophthalmoscope, thus differentiating this spasmodic condition from organic disorders of transparency.

Unfortunately, the death of Dr. Greenfield Sluder made it impossible to have his valuable opinion on changes in the rhinological condition after an interval of six years. The patient was referred by her physician to Dr. Arthur Proetz. Four days later, Dr. Proetz reported that x-ray photographs with lipiodol as well as direct observation of secretion established a diagnosis of sphenoidal sinusitis. Local ocular treatment was continued with a daily instillation of simple borated solution to permit the necessary measurements and observations. Vision was 20/15 and the patient was quite comfortable. But after another period of four days, her vision was clear only at intervals and Dr. Proetz reported that active treatment of the sphenoidal sinusitis apparently provoked more nasal congestion, that the *greatest relief had been gained by anesthesia of Meckel's ganglion* several days before. Treatment of the sphenoidal sinuses and local applications in the region of Meckel's ganglion were complicated by a marked deformity, a double deflection of the nasal septum.

It was decided not to use atropine to suspend the ciliary spasm, as this would complicate the study of its etiology. Having found clinically in other patients that instillations of tiny droplets of pilocarpine (1/2 per cent solution) sometimes seemed to steady or lessen fatigue of the function of accommodation (as suggested personally 35 years ago by the late Dr. John Green, Sr.), such instillations were made three times a day while nasal treatment was omitted. Contrary to what might have been expected from ocular instillations of a miotic, vision remained clear for about two hours after the droplets of 1/2 per cent. solution of pilocarpine. After a temporary improvement for three or four days, blurred vision returned and now the use of pilocarpine was not followed by clearing of vision as before. Intraocular tension as measured by the Schiotz tonometer was $8 \times 5.5 = 15$ mm. Hg.

Again ocular treatment was omitted to permit a clear field for the effect of nasal medication. After several days Dr. Proetz decided that the surgical

correction of the deformed nasal septum was most essential for successful treatment of the nasal irritation of the sphenopalatine ganglion, which seemed to be the activating influence in precipitating the ciliary spasm. Accordingly, on December 23, 1929, he made a submucous resection, and after a week vision became clear and remained so constantly without any intervening or subsequent ocular treatment. It was not found desirable to make any change in the correction for hyperopic astigmatism "against the rule" which had been prescribed a year before. Vision was 20/15 and the range of accommodation was normal for the patient's age. Letters received during the following year indicated the continuance of the favorable result thus achieved.

My experience coincides with that of Dr. Crisp, that actual ciliary spasm of the degree exhibited in this patient is unique. Vision was sometimes so suddenly impaired that she could not trust herself to cross city streets. I know of no parallel case in ophthalmic literature, in which the direct relation to the nasal condition so apparent in this patient has been recorded. Perhaps, these cases are rarely subjected to such a thorough rhinological study as was given to this patient by Dr. Greenfield Sluder and Dr. A. W. Proetz.

For six years nothing was heard from this patient. At the end of March 1936, a letter was received from Syracuse, New York, where she then resided in which she described attacks of ciliary spasm seemingly directly related to nasal inflammation during the fall of 1935. Her letter stated, "I experienced no difficulty with my eyes following Dr. Proetz's treatment six years ago until September of last year. During that time I led a strenuous life of study and work in New York City and here in Syracuse. In September my blurred vision returned spasmodically. At times it was very difficult for me to go about even in my own apartment and again my vision would be entirely clear for part of the time. Dr. Levy of the State Tower Building of this city examined my eyes and referred me to Dr. Moore of the Medical Arts Building for a possible sinus condition. Dr. Moore did not find the sinus condition severe and there was some doubt in his mind as to whether that caused the trouble with my eyes. The sinus was drained, I was hospitalized for a rest and finally late in October, when it became impossible for me to continue my work, an alternative of a prolonged rest or a sinus operation was suggested. I felt that previously I had received relief from treatment when my difficulty had been as great and since I was unable to arrange a leave of absence at that time, I went to New York City to consult Dr. MacPherson of the College of Physicians and Surgeons. In his absence, I was treated by Dr. Seagar. Three weeks later I returned to Syracuse and was able to work without any discomfort. I have had only a slight difficulty since that time. This followed a cold in December. I do not quite understand the difference in opinion of the doc-

tors here as to the cause of my difficulty, but I am thankful to be able again to keep up with my work and to be free of the fear of losing my sight. For the first time in my life I swam a great deal last summer and late in the season learned to dive. Dr. Seagar seemed to feel that that might have been a factor in the return of the old trouble."

Upon inquiry, Dr. Harry H. Levy, the ophthalmologist whom she first consulted in Syracuse, New York, kindly furnished a resume of his observations on this patient. She consulted him on October 6, 1935, complaining of severe periodic blurring of vision during the previous 24 hours. He stated, "The vision of the right eye was 8/200 with correction + 1.25 Cyl. 5: the left eye was 8/200 with a correction + 1.25 Cyl. 180°. It was noted that while recording the visual acuity, the vision was 20/20 in each eye with correction during a period of time when her attention was diverted from her eyes. The fundi were normal. Fields of vision on the perimeter were normal. Central color perception was normal in each eye during the period of clear vision. During the period of blurred vision, the responses were very indefinite and uncertain. It was my impression that the patient was suffering from ciliary spasm and that there was a large element of hysteria in her blindness. The patient was sent to an oto-laryngologist and internist for examination and treatment. The patient's next visit to me was three weeks later when I found the vision to be 20/40 in each eye, corrected to 20/20. The fundi and fields of vision were normal. The P. P. of the right eye was 150 mm., left eye 150 mm. N. P. C. 120 mm. It was evident from this that Miss D. had made a satisfactory recovery after treatment. Three weeks later, on October 24, 1935, Miss D. reported to me again complaining of recurrences of the attacks of blurring. Examination was exactly as previously reported. She was sent back to the oto-laryngologist for further observation and treatment. I again saw the patient on January 18, 1936, at which time she reported that she had had no recurrence for several months. The hysterical element in this case has as a basis the fact that the patient lived for several years with an aunt who was blind."

Doubt is cast on the probability of hysteria by the repeated direct and favorable response to nasal therapy — medical and surgical — and the apparent complete absence of other stigmata. Letters from Dr. Roy Seeley Moore, rhinologist, whom this patient consulted in Syracuse and from Dr. Paul S. Seagar, associate of Dr. Duncan MacPherson, New York City, who saw her in Dr. MacPherson's absence, confirm what was stated in the patient's letter.

Dr. Seagar treated her from November 11, to November 25. Dr. MacPherson wrote, Miss D. "came to see us November 11 suffering from poor vision which was treated here by ethmoidal packs and suction when the vision became normal." According to a daily record of treatments which accompanied this letter, "eyes much better" was noted on November 16, after four treatments and November 20 the notation

reads "able to read fine print." A copy of the report of the "Roentgen examination" by F. M. Law accompanied these letters. The x-ray diagnosis was "This is a chronic ethmoiditis involving both sides most marked in the posterior cells on the right and extending slightly into the sphenoids."

A reflex action affecting the ciliary muscle may come through the superior colliculus from various parts of the organism. Thus there might be a variety of reflex causes for ciliary muscular spasm. The clinical fact which confronts us in that direct local anesthesia of the sphenopalatine ganglion was followed by a striking relaxation of true ciliary spasm. Six years later the recurrence of that spasm was "cured" by submucous resection of the deflected septum and drainage of the sphenoidal sinus by Dr. Arthur Proetz. Again a six year period of comfort was followed by the return of the ciliary spasm in a similar degree. Again it was stopped by nasal treatment under the direction of Dr. Moore of Syracuse and Dr. Saegar of New York City. The diagnosis of ethmoiditis and sphenoiditis was twice confirmed roentgenologically.

The sphenopalatine ganglion as a part of the autonomic nervous system receives preganglionic fibers from the seventh cranial nerve through the nerve of the pterygoid canal, formerly called the vidian nerve. These parasympathetic fibers, according to the researches of Kuntz, Director of the Department of Microanatomy of St. Louis University School of Medicine, make a synapse in the ganglion after which the efferent fibers of the ganglion are distributed to the mucous membrane of the nose, palate, and pharynx where they regulate the serous and mucoid secretions. Through the zygomatic nerve, a branch is sent also to the lacrimal gland. Passing through Meckel's ganglion, but not in a real sense pertaining to it nor to its function are sympathetic fibers derived from the internal carotid plexus and sensory fibers from the 5th nerve which are distributed in the same region with the efferent fibers that arise in the ganglion.

The explanation for the relief obtained in ciliary spasm is not found in the actual function of the sphenopalatine ganglion, but apparently depends on the accessory sensory fibers which pass through it without being a part of its true ganglionic structure. These sensory fibers may be effectively blocked by the direct application of cocaine or the injection of novocain into the region of the ganglion. The same effect might

presumably be achieved by anesthesia of the entire region in which these sensory fibers are distributed. Stopping such an irritation that might have been caused by a deflected septum through surgical correction of the deformity would make repeated anesthesia of the ganglion unnecessary. The same applies to the effective treatment of ethmoiditis and sphenoiditis.

Meckel's ganglion then is in reality an innocent bystander, but being at the cross roads where both sympathetic fibers and sensory fibers are concentrated, it has been looked upon as the arch offender by Sluder, Ewing and others. Our lesson in this connection would appear to be that ophthalmologists can no longer successfully remain isolationists. The cause of glaucoma is to be sought out by considering anything that may modify capillary osmosis within the eyeball.

Does all glaucoma originate in the nose? No. Can nasal disorders have an influence in the onset or course of the intraocular hypertension? Emphatically, yes. To this end rhinologists and ophthalmologists have a long road ahead for co-operative endeavor and research.

PARTICIPATION OF LOCAL COUNTY SOCIETY MEMBERS IN ALL PROGRAMS OF THE COUNTY

ROSWELL T. PETTIT, M.D.

Secretary, LaSalle County Medical Society

OTTAWA, ILL.

I have no formal paper to present. I have been Secretary of the La Salle County Medical Society for eighteen years and at the time I was made Secretary we had two meetings a year — in the spring and in the fall. Then the lay education committee came into being, and then the Scientific Service Committee. Through this latter committee we have secured speakers, the committee has also sent out our notices of meetings to the members of our society and the members of adjoining societies and now we have six or eight meetings a year, all because the work of the secretary has been made easier.

During the first few years that our county society was furnished this service, it was our policy to have a local man present a paper on the program together with a speaker of outstanding merit from Chicago or elsewhere. With the passing of the years it became increasingly dif-

ficult to get the men in our local society to prepare a paper. Their replies would be, "I don't want to go up against those big shots from Chicago" or "nobody is interesting in hearing me talk." So it has come to pass that we depend, and I am sure that applies to most of the county societies downstate, on the importation of outside talent. This is an advantage but I feel that our local members have lost a certain something in not preparing papers themselves. This was emphasized a couple of years ago by Dr. Carl E. Black, revered ex-president of this society, who said that the man who prepares a paper gets more out of it than those who listen to it. Yet it is almost impossible to get our local men to do anything in the way of preparing a paper.

A few years ago, however, in order to interest our members in the activities of our society, we hit upon the idea of having them present cases. Any member of the society who had an interesting case could present it at the meeting. Then instead of having the meetings start with dinner we started them at four o'clock. There was a local chairman selected in whatever town the meeting was to be held and it was his duty to interest the various practitioners in that community to present cases. In each of these meetings after it was worked up by the local committee, four to six cases were presented and it made an extremely interesting addition to our programs, and it made it possible for the local members of the society to take an active part in the program without preparing formal papers.

I think perhaps we are all depending too much on the Scientific Service Committee and not participating enough in our county society activities ourselves. This clinic plan is one way in which we can get our members to take an active interest. Almost anybody has some case that is interesting, and this hour of case reports before dinner makes an interesting addition to the program.

PUNCTUATION

"Father," asked eight-year-old Alice, returning home from school, "are you good at punctuation?"

"Yes," replied the father.

"Well, tell me, please, how would you punctuate 'The wind blew a \$5 bill around the corner'."

"Why, daughter, I would simply put a period at the end of the sentence."

"I wouldn't," said Alice mischievously, "I would make a dash after the \$5 bill."—*National Monthly*.

POST GRADUATE SERVICES FOR COUNTY MEDICAL SOCIETIES

ROBERT S. BERGHOFF, M.D.

Chairman, Scientific Service Committee

CHICAGO

I want you to know how very thoroughly I appreciate your invitation, the third invitation, to address the Secretaries Conference. As on my previous invitations I will not attempt to read a formal paper at all. I much prefer, if you do not mind, to go along and talk informally about the work you and I and my committee are so deeply interested in, and that is the Scientific Service Committee. I realize that most of you know as much about the history of the Scientific Service Committee as I do, and probably more. I will not bore you with details of its organization et al.

I would, however, for the benefit of the few who might not know these details, point out that the Educational Committee was organized by the House of Delegates in 1924 under the chairmanship of Dr. Hutton. That committee was organized to carry medical education to the lay people largely through the instrumentation of the speakers bureau, radio and newspapers. I think two years later, in 1926, the Scientific Service Committee was organized and authorized by the House of Delegates and its function was and still is one thing: to bring more scientific service to the county societies. The first Scientific Service Committee was under the chairmanship of Dr. Hutton, the second under Dr. F. L. Brown and the third has been under its present chairman. There have been three chairmen but there has been and still is only one secretary, Jean McArthur. I would not ever dare to attempt to get up on the floor and talk about the work of this committee without mentioning her in this connection. The work is very simple because of her and her associates.

It is interesting to note that in 1927, practically the first year of the existence of the committee, 50 county societies were serviced; the committee put on 50 programs. In 1937 it serviced 324 county societies, and in 1939 our Scientific Service Committee serviced over 360 county programs, or practically one a day the year through. That is a lot of work. Not only did we service these programs, but in many in-

stances we publicized those programs before and after the meeting. We sent out notices to the members in many instances and all the other detail work that goes with such a service.

In May 1939 the House of Delegates authorized the chairman of this committee to go to St. Louis and sit in at a meeting of a committee on postgraduate work and report to that body on the work being done in the state of Illinois by the Scientific Service Committee and to bring back to the House of Delegates the impressions that he carried away from that meeting. Those impressions are as follows:

The chairman of your Scientific Service Committee sat in on that meeting and on leaving it the chairman felt that no state in the United States with federal money or without it is doing a bigger job for its state than is the Scientific Service Committee of this state. That can be said without any personal feeling, since there is no credit going to the present chairman because the committee goes right along without a chairman.

In May of last year the House of Delegates did another thing. It authorized the formation of another committee, known as the postgraduate committee. The function of that committee was to study the problems of postgraduate education being done by all the states in this country and then determine whether something might not be added to the work already being done by the Scientific Service Committee. The postgraduate committee met several times and after studying the efforts of the other states it selected two things it thought could be done in Illinois. From New York we took a new book. We have always had, as you know, a list of speakers and subjects which annually is revised and sent to the secretaries and presidents of the county societies. And in this connection, from New York we took a new idea about the book. We revamped the book; we listed the subjects and the speakers after the subjects, so that now you have 400 names of speakers and their 400 subjects so that it is very simple today for your secretary to arrange not for one program but half a dozen in advance by selecting from this book your subject and the very speaker you would like to have come and put it on for you. From Texas we took another idea. They have been putting on three day conferences in the larger cities in the state. The postgraduate com-

Presented before the Secretaries' Conference of the Illinois State Medical Society in Peoria on May 21, 1940.

mittee rather felt it more practical to try one day conferences because we believed it difficult for doctors to give up three days of their time, so we decided on a one day conference course. The first of the four that we gave was held in Jacksonville with Dr. Norbury as chairman. Many of you were there but for those of you who were not I should like to talk about it briefly.

There were 90 present for dinner; 125 came and stayed all day. There were eight speakers selected by the councillors of the district, each man to speak a half hour. If that was not a successful day I have never seen one. The second meeting was held in Champaign, and that was a little different because they wanted the meeting to begin at noon. They asked for and were furnished 11 men to speak 20 minutes each. They had 208 at that full day conference. The third was held at DuQuoin and that was also a highly successful day. They wanted a meeting that would begin at noon and go through a dinner meeting and just to make it different they gave you everything for nothing, including the dinner. They had an attendance of 159 with people coming 140 to 150 miles. And finally the fourth was held in Dixon last month. They had afternoon and evening session and there were 220 persons there that day.

I am simply here as the Chairman of the Scientific Service Committee to say that those four days were all highly successful. I very confidently hope that the House of Delegates will see fit to give us more one day conferences so that we can arrange for more men to attend.

There are a few things I would like to ask you to do for the committee. In the first place I think you should send us more speakers from your part of the country for our list. You have men in your communities who are better able to talk on certain subjects than we have in the larger cities. You understand your own problems better than we do. We would like to have you, if you enjoyed those conferences, to ask for many of them because if they are authorized we should be able to arrange for ten of them. I, as chairman, would appreciate it if you have any original ideas or any innovations, to let us have them. It occurred to me today that maybe what California has done we would be able to do in a modified form. They put on a three day conference course, all three days limited to chronic dis-

eases. I do not know but what it might be a good idea to limit these conference courses to some special thing such as chronic diseases. One more thought occurs to me. I do not know that it would be practical but maybe if we could arrange for ten conference days — maybe every word of those ten talks on those conference days could be published in a volume of one kind or another to be sold at cost, and then sent to every member of the county society in which those days were held.

At any rate there is the story of our committee and its activities for this year. I want you to know that we are deeply appreciative of your cooperation and I know Dr. Camp will give you some new ideas of what should be done next year.

CRITERIA FOR DISCONTINUING TREATMENT FOR SYPHILIS

S. WILLIAM BECKER, M.D.

CHICAGO

In contrast to the enormous literature relating to the diagnosis and treatment of syphilis, comparatively little has been written which deals specifically with the criteria for discontinuance of certain phases of syphilotherapy or termination of all treatment for syphilis in given cases. In recent years more emphasis has been placed on the minimum amount of treatment necessary to prevent relapse in early syphilis. It is obvious, however, that mere prevention of relapse is insufficient to insure the future of the syphilitic patient, even though it does eliminate him as a public health menace. Stress has also been placed on observation of patients with syphilis over a period varying from a few years to life.

The actual minimum amount of treatment which is administered by syphilologists throughout the world does not vary greatly, and the ideas of leading specialists in the United States have been fused in the publications of the Co-operative Clinic Group¹. On the contrary, there is undoubtedly considerable variation, even though of a minor degree, in the methods of terminating the various types of therapy for syphilis in university clinics throughout the country. One reason for the paucity of pub-

From the Section of Dermatology of the Department of Medicine, University of Chicago.

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Read before Section on Public Health & Hygiene, Illinois State Medical Society, May 21, 1940, Peoria.

lished specific directions for discontinuance of treatment may be the fact that the subject does not lend itself well to written presentation, but rather the procedure depends upon the mature judgement of the expert syphilologist.

A discussion of the problem just presented must be divided into two parts: first, a consideration of uncomplicated therapy and second, therapy complicated by intercurrent disease, by reactions to the treatment itself, or by technical difficulties. Uncomplicated therapy will be given first consideration.

When discontinuance of treatment is considered, two aspects become apparent. Practically every system of therapy combines non-specific and specific measures or represents a combination of two or more drugs used for their specific effect. Among the nonspecific measures, fever treatment and tryparsamide are most prominent. Drugs utilized for specific treatment comprise the arsphenamines, bismuth or mercury, and iodides. While several measures may be combined during the early months of therapy, it is not advisable to employ all of them for the entire duration of treatment. They are usually discontinued in a rather uniform sequence. Nonspecific measures are ordinarily eliminated before specific measures. Among the latter, the arsenicals are discontinued before the other drugs. The first aspect of our problem, therefore, involves decision relative to the point at which the certain types of therapy may safely or advantageously be discontinued. The second aspect deals with termination of all treatment in a given case.

Treatment of Early Syphilis. More specific statements are made relative to the termination of treatment for early syphilis than for that administered during other stages of the disease. This action is in conformity with the practice of routinizing the treatment for early syphilis, in contrast to the individualization of the treatment for late syphilis, where measures based on the mature judgement of the syphilologist are necessary to insure the best results.

For seronegative primary syphilis, Schamberg and Wright² recommend concurrent use of neoarsphenamine and bismuth during the first year of treatment, and state that "Treatment during the second year may consist of alternate courses of bismuth and mercury." In the event that the patient has seropositive primary or second-

ary syphilis, treatment covers two years before the patient is placed on observation.

The system recommended by the Cooperative Clinic Group¹ for the treatment of early syphilis comprises five courses of arsphenamine alternating with bismuth or combined with mercury and iodides. The entire course of treatment without a rest period covers 69 weeks, after which the patient is placed on observation. Moore³ suggests altering the above course to combine bismuth with the first three injections of arsphenamine.

Stokes⁴ recommends treatment similar to that of the Cooperative Clinic Group without full rest periods for at least one year after all symptoms and signs of the disease have disappeared, and adds: "Prolongation of heavy metal treatment as well as its early use seems to prevent relapse and progression in vital structures. End with at least two courses." He also reported preliminary studies on a system of therapy in which neoarsphenamine and bismuth are employed concurrently, with a rest period of one or two months after 40 weeks. The treatment is then terminated by means of two or three courses of bismuth of 15 injections each, with six weeks rest between courses.

Author's Schedule for Treatment of Early Syphilis. During the past twelve years, a system has been employed at the University of Chicago Clinics⁵ whereby continuous treatment covers a period of about one year, in which bismuth is used throughout and arsenicals and bismuth are given concurrently, with periodic intervals between arsenical courses. Treatment is continued by means of several ten weeks' courses of bismuth with increasing rest periods, according to Table I, for about three more years. Four courses of original arsphenamine were given over about 300 days without a full rest period, but five courses are recommended during the first year in case neoarsphenamine or mapharsen are used.

Returning to the first problem, namely a decision as to the time at which arsenical therapy may safely be discontinued, it is seen from the systems already mentioned that administration of an arsenical is recommended for from a total of forty weeks to a period of one year after all symptoms and signs have disappeared. Since in most instances the latter will have taken place at the end of the first arsenical course or at the

beginning of the second course, such a stipulation would not often prolong treatment to a period longer than the 69 weeks recommended by the Cooperative Clinic Group¹. Since treatment for early syphilis may ordinarily be intense, there is no objection to continuing combined arsenical and bismuth for the maximum time recommended by Stokes, namely up to one year after all signs and symptoms of the disease have disappeared. I believe, however, that the length of this period can be decreased by employment of arsenicals and bismuth concurrently and shortening of rest intervals between arsenical courses. Concentration of the arsenical phase of therapy is desirable if consistent with efficacy, since a larger percentage of patients may be induced to carry out such treatment to completion.

In regard to our second problem, complete termination of therapy in early syphilis, recommendations for continuance of injections of bismuth vary from none in the case of the Cooperative Clinic Group¹ to a period of three years in the author's schedule.

Treatment of Late Syphilis. A consideration of late acquired syphilis is often complicated by the presence of signs and symptoms of the disease, both clinical and serologic. The treatment of so-called latent syphilis is less complicated than that of late symptomatic syphilis, and hence lends itself more readily to routinization. For this reason, more specific statements may be found relative to discontinuance of therapy in latent syphilis than in the symptomatic varieties where personal experience and judgement are more necessary for decision relative to such action. Statements pertaining to the actual duration of treatment are often rather vague. For instance, Schamberg and Wright² stated: "Every patient with syphilis must secure an irreducible minimum of treatment which is based upon the sum total of medical experience," and in regard to cardiovascular syphilis: "Carry out specific treatment for an extended period of time, even though all clinical manifestations disappear." Discussion of other types of internal late syphilis are also indefinite as regards cessation of therapy. On the other hand Stokes⁴ states: "Don't treat even the most eligible and willing latent patient beyond the standard for early syphilis." This statement may be interpreted as meaning not over four courses of arsphenamine

and discontinuance of all treatment one year after the blood test has become negative.

Moore and Padget are somewhat more specific in their recommendation for treatment of latent syphilis. In an article entitled "The Problem of Seroresistant Syphilis"⁶, they advised continuous treatment for two years with full doses of the drugs employed, to be followed by life-time observation. On the other hand, if examination reveals signs of visceral involvement, treatment is carried out according to the type of involvement.

Author's Schedule for Late Syphilis. At the University of Chicago Clinics⁵ therapy for late syphilis is carried out according to a basic schedule presented in Table 2 in which preparatory treatment is given with bismuth, usually accompanied by iodides, for a period of ten weeks. Three courses of arsenicals are administered at intervals of four months at the termination of which arsenicals are discontinued. The sole exception to this discontinuance is in the case of neurosyphilis, in which tryparsamide is sometimes administered over several months or years. Arsenicals are not necessary after the age of 60. Bismuth is then given in courses of ten injections at increasingly longer intervals up to that of one year. If the blood test is negative, the patient is placed on observation, but if positive, a course of bismuth is given yearly until it becomes negative or the patient reaches the age of about 70. If the patient is not asymptomatic, but has internal involvement, treatment is varied according to the presenting complication. Preparatory treatment in form of bismuth and iodides differs in the various forms of late syphilis, such as cardiovascular, hepatic or neurosyphilis, but the duration of arsenical therapy, in case it is indicated, is for the same period, namely about one year. The tapering off process by means of bismuth is essentially the same in all varieties with the exception of neurosyphilis where courses of bismuth are repeated at intervals of two months, and yearly courses of bismuth are administered in case the blood test is still positive.

When may be the treatment of prenatal syphilis be discontinued? Kemp⁷ prefers to treat prenatally syphilitic children under four years of age as he would patients with early syphilis and those over four years of age according to the schedule for late syphilis. Discontinuance of the

arsenicals and bismuth can therefore be carried out according to the indications as presented in the foregoing discussions of early and late syphilis. In early prenatal syphilis Schamberg and Wright² recommend alternate arsenical and bismuth courses for two years, and for late prenatal syphilis continuous treatment for the first year, almost as rigid the second year, and after that two courses of treatment a year consisting of bismuth intragluteally. They do not state specifically when treatment may be discontinued. Stokes⁴ emphasizes the advisability of intensive treatment for early prenatal syphilis, but does not furnish definite criteria for its discontinuance. Moore³ recommends alternating courses of sulfarsphenamine and bismuth with no rest periods for a total of 79 weeks, and adds: "This is absolute minimum of treatment, which should be continued longer, if necessary, to fulfill serologic standard." He recommends that late prenatal syphilis be treated according to the same principles as those for late acquired syphilis, as have been already discussed.

Smith⁸ recommends a minimum of one year of continuous treatment for early prenatal syphilis, an additional year for children with Wassermann fastness, and still further therapy for those who show persistent active lesions, especially interstitial keratitis and involvement of the central nervous system.

Author's Schedule for Prenatal Syphilis. My policy is to treat children with early prenatal syphilis by means of arsenical and bismuth therapy for two years, to be followed by courses of bismuth at increasingly longer intervals, with eventually one course yearly. Late prenatal syphilis is treated by means of bismarsen or an arsphenamine and bismuth according to the schedule for late syphilis. The tapering off process with bismuth is the same as the above. Treatment for prenatal syphilis may be discontinued with safety at the age of 35.

Non-specific Measures. Nonspecific measures, which are used most often in the treatment of neurosyphilis, are usually discontinued after they have fulfilled their function. Fever treatment is seldom continued as long as other methods of therapy. It is usually administered in courses some months apart, and, after the patient has shown clinical and/or serologic improvement, treatment is continued solely by specific measures, or the nonspecific function is taken over

by tryparsamide. This, in turn, is discontinued eventually, and treatment is terminated by courses of bismuth, as aforementioned.

Treatment during Pregnancy for the protection of the child. A pregnant syphilitic woman is always treated during pregnancy, regardless of the results of serologic tests. If she has been treated for her own disease and is clinically and serologically negative, treatment may be discontinued at termination of pregnancy. Otherwise, she is treated according to the schedule for early or late syphilis, depending on the stage of her infection.

INTERCURRENT DISEASE, COMPLICATIONS AND TECHNICAL DIFFICULTIES

The considerations which have been thus far presented have dealt with uncomplicated therapy. Additional alterations in treatment schedules involving discontinuation of certain phases of therapy must be given serious consideration in the presence of three types of complications. In the first place, it may be necessary to interrupt treatment temporarily or permanently on account of serious concurrent disease such as acute systemic infection, fulminating tuberculosis, nephritis or hepatitis. Temporary discontinuance of therapy in late syphilis is not a serious matter, but interruption of treatment for early syphilis should be permitted only when absolutely necessary.

Secondly, various drugs must be discontinued at times on account of intolerance. For instance, some patients cannot tolerate any form of arsenical. In such instances, treatment is carried out by means of bismuth, iodides and mercury. Tryparsamide may produce blurring or cloudiness of vision, in which event it must be permanently discontinued. Mercury, which is used very little at the present time, may be strictly contraindicated on account of kidney disease. Bismuth is usually well tolerated, and almost never has to be interrupted permanently on account of intolerance. Likewise, iodides must be discontinued only rarely.

Thirdly, technical difficulty may necessitate change in the method of administration. Lack of veins may require discontinuance of drugs which are administered intravenously, such as sodium iodide and some of the arsenicals. In such cases, iodides may be given by mouth, and bismarsen may be given intragluteally as a sub-

stitute for an intravenous arsenical. If bismarsen produces severe reaction in the buttock, it may be necessary to substitute acetarsone, which is administered orally. Recent studies have shown that bismuth in some forms may be efficacious when given by mouth.

Summary. Little consideration is given in the literature to criteria for discontinuance of certain phases of syphilotherapy and termination of all treatment for syphilis.

TABLE 1. TREATMENT FOR ASYMPTOMATIC EARLY SYPHILIS

Days	Neoarsphenamine	Bismuth Salicylate	Days	Neoarsphenamine	Bismuth Salicylate
1	0.45		298	...	2.0 c.c.
3	0.9		305	...	2.0
5	0.9		312	...	2.0
10	0.6	1.0 c.c.	319	...	2.0
15	0.6	1.0	326	...	2.0
20	0.6	1.0	333	0.45	1.0
25	0.6	1.0	338	0.6	1.0
30	0.6	1.0	343	0.6	1.0
35	0.6	1.0	348	0.6	1.0
40	0.6	1.0	353	0.6	1.0
45	0.6	1.0	358	0.6	1.0
50	0.6	1.0	363	0.6	1.0
55	0.6	1.0	368	0.6	1.0
60	0.6	1.0			
67	...	2.0	One month rest.		
74	...	2.0	10 bismuth salicylate at weekly intervals.		
81	...	2.0	3 months rest.		
88	...	2.0	10 bismuth salicylate.		
95	...	2.0	6 months rest.		
102	0.45	1.0	10 bismuth salicylate.		
107	0.6	1.0	1 year rest.		
112	0.6	1.0	10 bismuth salicylate.		
117	0.6	1.0	Life-time observation.		
122	0.6	1.0	This schedule is for a healthy adult male, and the dosage of neoarsphenamine should be slightly smaller for women. The bismuth dosage may remain the same.		
127	0.6	1.0	Mapharsen may be substituted for neoarsphenamine in a dose of 0.030G. to 0.60G.		
132	0.6	1.0			
137	0.6	1.0			
144	...	2.0			
151	...	2.0			
158	...	2.0			
165	...	2.0			
172	...	2.0			
179	0.45	1.0			
184	0.6	1.0			
189	0.6	1.0			
194	0.6	1.0			
199	0.6	1.0			
204	0.6	1.0			
209	0.6	1.0			
214	0.6	1.0			
221	...	2.0			
228	...	2.0			
235	...	2.0			
242	...	2.0			
249	...	2.0			
256	0.45	1.0			
261	0.6	1.0			
266	0.6	1.0			
271	0.6	1.0			
276	0.6	1.0			
281	0.6	1.0			
286	0.6	1.0			
291	0.6	1.0			

The literature is reviewed and treatment schedules are presented according to which the various phases of uncomplicated treatment are discontinued in logical sequence.

It is possible to devise systems of therapy from which the time for discontinuance of therapy may be calculated in a large majority of instances.

Treatment must be altered in the presence of intercurrent disease, complications from treatment, and in the face of technical difficulties.

In symptomatic late syphilis the mature judgment of the expert syphilologist is often necessary to insure proper continuation of treatment.

BIBLIOGRAPHY

1. Stokes, J. H., Cole, H. N., Moore, J. E., O'Leary, P. A., Wile, U. J., Parran, T., Vonderlehr, R. A., and Usilton, Lida J.: Standard Treatment Procedure in Early Syphilis. A Resume of Modern Principles. Ven. Dis. Inform., Wash-

TABLE 2. TREATMENT FOR UNCOMPLICATED LATE SYPHILIS

Days	Neoarsphenamine	Bismuth Salicylate	Days	Neoarsphenamine	Bismuth Salicylate
1		10 weekly injections, 1.0			10 weekly injections.
to		to 2.0 c.c.			
70					
71	0.45	1.0	1 year's rest		
76	0.6	1.0			
81	0.6	1.0			10 weekly injections.
86	0.6	1.0			
91	0.6	1.0	If blood test negative, place on observation. If positive, give one course of bismuth each year.		
96	0.6	1.0			
101	0.6	1.0	Iodides may be given throughout.		
106	0.6	1.0			
1 month rest					
136		8 weekly injections, 1.0			
to		to 2.0 c.c.			
196					
1 month rest					
226	0.45	1.0	This schedule is for a healthy adult male, and the dosage of neoarsphenamine should be slightly smaller for women. The bismuth dosage may remain the same.		
231	0.6	1.0			
236	0.6	1.0			
241	0.6	1.0			
246	0.6	1.0			
251	0.6	1.0			
256	0.6	1.0			
261	0.6	1.0			
1 month rest					
292		8 weekly injections, 1.0			
to		to 2.0 c.c.			
352					
1 month rest					
382	0.45	1.0			
387	0.6	1.0			
392	0.6	1.0			
397	0.6	1.0			
402	0.6	1.0			
407	0.6	1.0			
412	0.6	1.0			
417	0.6	1.0			
3 months' rest					
		10 weekly injections, 1.0			
		to 2.0 c.c.			
6 months' rest					

ington, 15: 149, 1934.

O'Leary, P. A., Cole, H. N., Moore, J. E., Stokes, J. H., Wile, U. J., Parran, T., Vonderlehr, R. A., and Usilton, Lida J.: Asymptomatic Syphilis. *Ven. Dis. Inform.*, Washington, 18: 45, 1937.

2. Schamberg, J. F., and Wright, C. S.: *Treatment of Syphilis*, New York, D. Appleton and Co., 1932.

3. Moore, J. E.: *The Modern Treatment of Syphilis*, Springfield, Ill. C. C. Thomas, 1933.

4. Stokes, J. H.: *Modern Clinical Syphilology*, Philadelphia, W. B. Saunders Company, 1934.

5. Becker, S. W., and Obermayer, M. E.: *Modern Dermatology and Syphilology*, Philadelphia, J. B. Lippincott Co., 1940.

6. Moore, J. E., and Padget, P.: The Problem of Sero-resistant Syphilis, *J.A.M.A.*, 110: 96, 1938.

7. Kemp, J. E.: Personal communication.

8. Smith, F. R., Jr.: Congenital Syphilis, *J.A.M.A.*, 105: 409, 1935.

DISCUSSION

Dr. Herman Solaway, Chicago: The determination of the probable "cure" of a luetic patient presents a very difficult and at times a perplexing problem. Before one is able to pronounce a patient treated for syphilis as "cured," he must take in consideration several important and pertinent facts: the stage or classification of the disease; how early the condition was diagnosed; how soon treatment was instituted; the type, response and duration of the treatment; and the results of clinical, physical and laboratory examinations. The more one considers the question of "cure" in syphilis, the more he realizes that it is impossible to speak of definiteness and assurance. The only definite evidence of "cure" of syphilis in man is reinfection. Stokes considers and presents at least 17 indisputable criteria requirements which must be fulfilled before a reinfection as a criterion of "cure" can be established. An analysis of the cases of reinfection of syphilis considered by the Cooperative Clinical Group and the reinfections collected from the literature tend to show that from 80 to 93 per cent. were relapses.

Tissue transplantation which has been the best criterion in the experimental animal, has not been shown to be applicable to man. Necropsy evidence is of no practical value in deciding the question of "cure" in a living patient.

The criteria for the "cure" of syphilis, has been considered by many under three interpretations; the eradication from the body of the last remaining treponeme, the biologic "cure," the disappearance of all signs and symptoms of the disease and ultimate noninfectiousness of the patient, (symptomatic "cure"), and the return to negative findings and remains so the serologic tests of blood and spinal fluid (serologic "cure").

It appears that the real satisfactory standard of "cure" is prolonged clinical observation. It must emphatically be impressed before any phase of cure can be considered that it is of great importance to make a diagnosis of syphilis on positive findings as early as possible, to start antiluetic treatment just as soon as a diagnosis is made, to administer at least 18

months of continuous antiluetic medication, to recommend a complete clinical, physical and laboratory examination including a spinal puncture, x-ray of cardiac region, and a complete eye examination.

An annual complete examination should be made on these patients for it is to be remembered that relapse may be late. A long life without complications may continue to be the proof of "cure" of syphilis.

As members of the Section of Public Health we are also vitally concerned with another phase of the control of this disease and that is Public Health Syphilis. Although we are in accord with the above mentioned criteria for the cure of syphilis from a medical viewpoint, yet in Public Health Syphilis we are confronted with the control of syphilis rather than the cure.

We must apply to every case of early syphilis the well known Public Health Principles toward the detection and prevention of a communicable disease, one subject to the concepts of spread and contact. Our aims will then be directed to render these cases non-infectious and thereby stopping its spread. It is an accepted fact that degree of infectiousness of a case of syphilis of five years duration is very low. Moore and Kemp have shown that with the minimum amount of continuous antiluetic treatment in early syphilis consisting of 20 intravenous injections of an arsenical and 20 intramuscular injections of a heavy metal (bismuth) that probable "cure" was obtained in 78.8% of cases. The incidence of clinical relapses as reported by the Cooperative Clinical Group in the same type of cases receiving the same amount of minimum treatment occurred in 8.51% of the cases studied.

It would appear that in the management of public health syphilis our aims would be chiefly directed to the control of the infection until it is rendered non-infectious rather than to seek a "cure" as in medical syphilis. However the same ultimate result should be sought for wherever possible in every case of early syphilis.

The criteria for the "cure" of early syphilis from a public health viewpoint should be considered as the criteria of a "controlled" or arrested case. This can be successfully carried out by the early recognition and adequate treatment of every case of early syphilis with at least one year of continuous antiluetic medication to a point of non-infectiousness; and by the prevention of the spread of infection which demands an epidemiological investigation of the source and contacts and immediate institution of treatment to all positive cases.

"How cold your nose is!"

These words came from the daughter of the house, who was sitting in the parlor with her beau.

"Is Towser in the parlor again," demanded her mother from the next room.

There was a long pause.

"No, mother; Towser isn't in the parlor."

And the silence resumed its reign.

THE ORGANIZATION AND FUNCTION
OF THE DISTRICT HEALTH UNITS OF
THE STATE DEPARTMENT OF
PUBLIC HEALTH

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SPRINGFIELD

The people today not only expect but demand protection from preventable diseases, particularly diseases which can be prevented through sanitation. In Illinois the responsibility for protecting the public health is reposed by law and by the pressure of popular opinion in the State Department of Public Health. The sensitiveness of the people about these matters was demonstrated in connection with the outbreak of typhoid fever at Manteno last year and by the aftermath of that unfortunate event.

The popular tendency has gone even farther. The public attitude leans more and more toward holding health authorities responsible for epidemics of such diseases as smallpox and diphtheria, the prevention of which depends in no small degree on individual action. The people expect health officers and health departments to initiate and carry through programs which will prevent such outbreaks. This growing attitude is illustrated in numerous ways.

Only recently, for example, the death of a high school boy from pneumonia led to the criticism of a health department for alleged delay in handling a laboratory specimen taken from the boy. The family of the boy quite naturally cherished the belief that his life might have been saved if the results of the laboratory test had been available to the doctor earlier.

On more than one occasion in years gone by, the State Department of Public Health has been accused erroneously of delay in sending out anti-rabic treatment where deaths from rabies were concerned. Although unfounded, these accusations reveal a widespread popular tendency to hold health authorities responsible for the failure of preventive medicine from whatever cause.

This same tendency is reflected also by legislative action. The law passed in 1937 which requires premarital examinations for the detection of venereal diseases where they exist was introduced by a member of the General Assembly apparently on his own initiative. The bill was

certainly not initiated by the State Department of Public Health nor by the organized medical profession. The same may be said about the law passed in 1939, which requires physicians to take blood specimens from pregnant women for tests for syphilis.

The law creating a division of cancer control, passed in 1939, was not suggested by the State Department of Public Health nor by the organized medical profession. On the other hand, the General Assembly, has been more and more liberal in its response to requests from the State Department of Public Health for appropriations. The attitude of the legislators has been especially liberal in providing funds for the purchase and manufacture of biologics for free distribution.

These illustrations show clearly the trend of public opinion concerning health protection and concerning the responsibility of health authorities. Often indifferent and sometimes actively opposed to programs initiated locally by health officers, the people nevertheless are prone to blame the health office for unhappy experiences which they believe preventive medicine should avoid.

This situation explains why a plan of district health administration was adopted in Illinois. The district system was the only practicable avenue through which the public health services of the State Department of Public Health could be expanded efficiently and localized so as to meet public demands as far as resources permit. The establishment of district units simply made it possible for the Department to do a better job on a larger scale.

The district idea of public health administration from the standpoint of the State is not new in Illinois. From the very outset, beginning about 1900, when physicians were engaged on a per diem basis to investigate epidemic outbreaks, these representatives have been assigned to well defined districts. Later, in 1915, when full time medical officers for field service were first employed, each was assigned to a district. This practice has continued up to the present time. During the period prior to 1936, however, the practice varied as to full time and part time duty of the district health officers. Whether or not these officers were on a full time basis depended on appropriations available and on administrative policy.

*Given before the Section on Public Health and Hygiene at the Annual Meeting of the Illinois State Medical Society, Peoria, May 22, 1940.

* It is important also to observe that prior to 1936 the district medical officers worked alone except on special occasions where circumstances required the assistance of other personnel, such as nurses or sanitary engineers, or bacteriologist, from the central office. The district medical officers had no personnel assigned to work with them on a permanent basis and they had no established local headquarters other than their own homes or offices.

Although the district medical officers worked alone, a staff of about 15 public health nurses had been built up in the Department. These nurses were likewise assigned to definite districts but the districts for nurses did not coincide with the districts for medical officers. In some cases different parts of the district of the medical officer would fall within the districts of two or three of the nurses. The executive supervision over the medical officers centered in one division and that of the nurses in another. In the field the medical officer had no administrative authority over the nurses. This situation prevented good team-work on the part of the field personnel of the Department and led to the waste of effort.

The important change which took place in 1936 was the adoption of a plan that unified the field strength of the Department into full time district units with established headquarters and with a staff to work under the direction of the medical officer in charge, the district health superintendent. All of the district units were placed under the executive supervision of a single medical officer attached to the central office at Springfield. This plan simply brought together in a better administrative system the personnel and resources of the Department available for field service.

Simultaneously with the adoption of the unified district plan the field personnel was strengthened considerably. This was made possible by funds allotted to Illinois by Federal Government under the provisions of the Social Security Act. That Act was passed in August 1935 and funds were made available to Illinois under its provisions for the six months ending June 30, 1936, and for each fiscal year thereafter. The Social Security Act authorizes a continuation of appropriations indefinitely by the Federal Government for allotment to States for public health purposes. For practical purposes the Federal-State cooperation upon which the district

health unit plan in Illinois functions may be regarded as a permanent system of public health administration.

On July 1, 1936, six full time district units were established in Illinois. The plan which was finally adopted as permanent calls for a total of 20 such units. At the present time, nineteen have been organized. The other one will probably be organized within the next six months.

The staff of each unit consists of a medical officer, who is in charge, a public health nurse, a sanitary engineer, and a clerk. The medical officer, the nurse and the engineer has each had special training in public health practice. Most of the physicians and nurses have spent a year each in study at special schools of public health connected with universities which offer approved courses in this field. The staff personnel of the units is therefore well trained and competent in public health matters.

The territory of each district consists of from 3 to 7 counties and the populations range from approximately 100,000 to 800,000. A little reflection on the strength of the district staff in relation to the population served will suggest the magnitude and character of programs which it will be possible for the district units to undertake.

A reasonably adequate local health department for a community of 100,000 people requires the services of a staff of 70 trained persons, employed on a full time basis. This staff of 70 includes 7 medical officers and assistants; 40 nurses; a dentist, a sanitary engineer, an education specialist, a laboratory director, a statistician, a social worker and a dental hygienist; 7 milk, food and sanitary inspectors; 2 laboratory assistants and 6 clerks. If a staff of that size is needed to provide a good public health program along established lines to a community of 100,000, it is quite clear that the district health units of the State Department of Public Health, with a present maximum staff of 4, including the office clerk, can do little more than arouse local interest and suggest, advise and guide local efforts along public health lines. With the present available strength, the district health units can never undertake anything that approaches a comprehensive, well-rounded and adequate program of local health service in keeping with modern standards.

The work undertaken by the district health

units is very largely along five general lines. These are: 1. communicable disease control; 2. maternity and infant hygiene; 3. health promotion in the schools; 4. the improvement of sanitation and 5. education for health. All of this work must of necessity be general in character because of the very limited personnel in the districts. Detailed local work, such as routine quarantine, routine inspection of school children, routine programs of vaccination and immunization and routine infant and maternal hygiene service must of necessity be done by local workers if it is done at all. The district personnel stimulates and encourages such activities and they render every practicable assistance but responsibility for local work is largely in local hands.

In keeping with the established policy of the Department the district personnel is instructed to work in close cooperation and harmony with the medical profession and with local health officials. This is at all times fundamental. The district superintendents do not practice medicine. Even such procedures as the Schick test and the tuberculin test are done by the district health superintendents only at the request of the local medical society if there is one or the local practicing physicians where there are no organized societies. The district superintendents are instructed in reference to tuberculosis case finding, for example to make tuberculin tests among high school students, and follow up with x-rays of positive reactions, *when requested to do so by the local medical society and with their cooperation*. This principle holds with other activities involving the practice of medicine.

Within these limitations the district units aim first of all at the control of communicable diseases. To this end every reported case of typhoid fever, diphtheria, smallpox and several of the rarer diseases is investigated to determine the source of infection if possible and to take such steps as may be practicable to prevent spreading. Investigations are made also of epidemic outbreaks of all kinds. Cases of venereal diseases are investigated when circumstances require and efforts are made to discover sources of infection and to cause delinquent patients to place themselves under treatment by practicing physicians. To prevent outbreaks the district personnel stimulated local programs of vaccination and immunization against all diseases controllable in this way. The district medical officer, moreover,

is instructed to assist local physicians and local health officials on request whenever at all practicable in connection with the control of communicable disease of any kind.

The promotion of maternity and infant hygiene is a definite item in the programs of the district units. Instructions to the district medical officers as to activity along this line read as follows:

1. This will consist of close cooperation with the medical society program (if there is one) in organization of maternal hygiene classes and demonstration and antepartum groups, in order that a closer supervision may be brought about by having the prospective mother report to the family physician for a Kahn test, blood pressure reading and urinalysis, and by teaching the prospective mother how to prepare for the delivery. This should be followed, when possible, by neo-natal and post-partum calls, in order that the infant may receive proper nutrition, and the mother be advised regarding hygiene of the puerperium period.
2. Well baby clinics will be held in each county, together with the promotion of summer round-ups, which will be conducted in cooperation with members of the county medical society.

The work in maternity and infant hygiene is of basic importance in all public health programs and has yielded already to the most impressive results of efforts in the public health field.

The service of the district units in sanitation is on a more satisfactory basis than any other service offered for several reasons. Environmental sanitation is an older service than any other, it is appreciated more generally, it is more nearly an exact science and sanitary improvements affecting an entire community can often be made through the cooperation of only a few officials. The sanitary engineer in each district is instructed to inspect public water supply and sewage disposal systems when so requested by local authorities in connection with problems involving public health hazards. As routine activities the engineers make surveys of the sanitary needs of rural schools, of recreational and tourist camps, and of local fair grounds. They keep informed concerning the proposed sinking of wells and offer their services in respect to location and structural features. They are available for consultation concerning sanitary problems of local importance.

The public health nurse in the district assists the medical officer in his work, gives demonstrations in public health nursing to promote this

service on a local financial basis and assists local public health nurses in every practicable way.

All of the district staff members take advantage of every opportunity so far as possible to do health educational work. Each district is provided with motion picture equipment and with other facilities for giving illustrated lectures.

In summing up it may be said that the district health unit is the local representation of the State Department of Public Health and as such is responsible for extending the services of the Department as far as possible. As time goes on and resources increase, it may be possible to make each unit equivalent to the State Department of Public Health for all ordinary local purposes. This would include, among other things, the routing of morbidity reports from their sources through the district offices. For the present, however, the strength of the unit personnel makes impossible such detailed activity.

DISCUSSION

Dr. W. C. Earle, Champaign: While I am a native son of Illinois and a member of the Illinois Medical Society since graduation from medical school it has only been in the past year that I have had the pleasure of taking an active part in this State in public health work. It has been a pleasure to become acquainted with Doctor Baxter and his staff and to learn first hand of the work he is doing. We have just heard a summary of one phase of this work.

I hope Doctor Baxter won't object to my borrowing from a recent talk he gave us in Champaign. He referred, as I recall, to our progressiveness in many lines but to the fact that when it came to the practical application of medical knowledge Illinois lagged far behind and as a State had only recently taken advantage of knowledge known for years concerning the treatment of syphilis and other diseases. Certainly it is a very definite step forward to have finally full time special trained personnel to direct his district activities — a fact recognized by many other states years ago but only recently adopted in Illinois.

Most states as large as ours, however, have found a district organization centrally directed and without adequate and specially trained local organizations very expensive and not very efficient. New York City has largely decentralized its own department in order to give efficient service to its large population. I am wondering what the ultimate goal should be in Illinois. Will it be more State and Federal funds poured into the District System which we have, or will it be enabling legislation to encourage and permit more desirable local governmental units such as counties to appropriate for and direct local health work. As Doctor Baxter states his staff is directed to work in close cooperation with local health authorities. But in most instances all the authority is given to town-

ship supervisors and part time health officers who may not be trained to assume this responsibility properly. Undoubtedly the best is being done that is possible under the present system but with locally financed full time health personnel a State Department of Health with a district system really could give Illinois a Health Service which it has never known before.

Doctor Baxter has emphasized his cooperation with the medical profession. I can testify that this is true in fact as well as words. To render an efficient service, however, utilizing facts that are commonly accepted as good public health practice, one must assume that the medical profession is well informed and able to put into practice all these technics. We all realize that that goal has not been reached. The post-graduate courses and district meetings of the Medical Society to bring the latest innovations to the general practitioner are helping to take care of this situation. From a public health standpoint, however, it is not enough for all physicians to know how to vaccinate or to test properly. Not very much is accomplished if for instance only half the children are immunized to diphtheria or even 75%. It must be almost 90-100% to really reduce the incidence and there are times that the Health Department is the only agency that can go out and get the last 25%. We should cooperate with, educate, and assist in all ways possible the family physician to accomplish these things but I am wondering whether the family physician realizes that there is still a certain amount left to be done which he won't get anyway, but which the Health Department can do.

I am glad to be back in Illinois and to take an active part in public health work here. I believe in the State and in its future with regard to adequate health service.

Dr. Winston Tucker, Evanston: I wish to congratulate the essayist for the presentation of an excellent paper. Many Public Health Administrators are unable to hire the personnel which is necessary to provide a high standard of Public Health service in their communities. Adequately trained and experienced personnel is required in Public Health work, and it is for this reason that Federal funds are now being made available for training Public Health workers.

The speaker recommends a staff of 70 persons for a health department serving a community of 100,000 people. Possibly you will be interested in the personnel of the health agencies operating in the City of Evanston. Private health agencies supported by Charity or the Community Chest play an important part in the health program in Evanston. All of these agencies cooperate very closely with the official agencies, and two of them, the Visiting Nurse Association and the Infant Welfare Society are housed with the City Health Department.

The official tax-supported health agencies in Evanston are the City Health Department and the School Health Service. These two agencies employ 24 persons on a full-time basis and 5 persons on a part-time

basis. The private health agencies employ 21 persons on a full-time basis and 10 persons on a part-time basis. Accordingly, a total of 60 persons is engaged in Public Health work in Evanston, 45 of whom are employed full-time. Thirty of the full-time employees are public health nurses, which in a community of 70,000 people comes very close to the ratio recommended by the National Organization for Public Health Nursing of one full-time public health nurse for each 2,000 in the general population. Of the remaining 30 persons, 13 are physicians, 3 of whom serve full-time, two as school physicians and the third as Health Officer. The remainder of the personnel is divided as follows: — 2 dentists part-time; 2 stenographer-clerks part-time; 4 sanitary inspectors; 3 laboratory technicians and 3 stenographer-clerks.

For keeping of proper records, adequate office personnel is required. Too frequently this is one phase of health department work which is neglected. Well trained, intelligent stenographer-clerks are very valuable in such an organization, and it is my suggestion that Health Administrators make every effort to hire well trained office help as well as professional personnel. With the development of local public health programs in this state, the District Units of the State Departments are being organized in the proper way. This expanding health program has been much needed in Illinois, and if continued, this State will be one of the leaders in Public Health in the nation.

INDUSTRIAL HYGIENE IN A PUBLIC HEALTH PROGRAM

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Any public health program to be successful must be rather closely integrated with the other public health activities of the community and with existing medical facilities. Whether the program be child hygiene, sanitation, tuberculosis, venereal disease or industrial hygiene, all are striving toward the same ultimate result, namely, better community health.

While such a cooperative program is of value in any health activity, it is of the utmost importance in the field of industrial hygiene, as here we must deal with the entire public health of the great majority of the adult population — those who earn their livelihood in our many industrial establishments.

In the minds of many public health workers, the term "industrial hygiene" is often construed as being synonymous with the control of diseases

due to occupation. Because of this unwarranted restricted interpretation of this phase of public health there has been a lack of interest in the health problems of our industrial population, and so, the statement that the greatest unmet public health need is in the field of industrial hygiene appears justified.

Industry as we know it, not only deals with machinery, but also with men and women who are part of a community.

Modern industry comprising some 40 millions of workers in this country, who are engaged in innumerable types of work and under varying conditions of their immediate environment, which in one way or another may seriously affect the health and efficiency of these workers, has gradually given rise to many outstanding conditions influencing health, such as, overcrowding, problems in special sanitation, industrial house-keeping, fatigue, nutrition, ventilation, illumination, industrial wastes, increased frequency of ordinary diseases and illness, air pollution, occupational diseases, and others. These complications of modern industry do influence morbidity and mortality rates.

The occupational diseases, although important, do not take an especially prominent place in either the morbidity or mortality experience of industrial workers. An examination of the vital statistics of industry will show that industrial workers suffer from the same diseases as the population in general. From various published statistics during the past few years we know that ten times as much absenteeism in industry results from non-occupational diseases as from the strictly occupational diseases. This being true, we cannot content ourselves with this small fraction of the problem, nor do we have a license to exist if we are to totally neglect 90 per cent. of our load.

The present century has seen the development of the technique of disease prevention and health conservation, and has seen that technique widely applied by local, state and federal health agencies with specialized public health personnel, by a variety of organized voluntary agencies, as well as the private physician. The achievements of this organized and cooperative effort in the prevention of disease is well known to all of you.

The purpose of public health, as we view it, is to afford health protection to all the people, whether it is in the home, school or factory.

Furthermore, the control of man's environment, insofar as such control reduces disease, conserves life or makes living safer, is a public health enterprise.

The general public have become more and more conscious of the health problems affecting workers in industry and have maintained that the guidance and protection of the health of those adults is the responsibility of public health authorities. This should be interpreted that sound public health services must be extended to our industrial population, and must deal adequately with all ages of life.

Dr. Vaughan, Health Commissioner of Detroit, states that "industrial hygiene has long flirted with the local health officer on the periphery of his public health program." With a few noteworthy exceptions, prior to 1936 there had been much talk about industrial hygiene, but little action. Today, there are industrial hygiene divisions in 30 state, 8 city and 2 county health departments.

As we glance back over the road traveled by our health pioneers, we observe that each few years some special public health problem seems to hold the center of the arena. It may be tuberculosis, cancer, heart disease, syphilis or mental hygiene.

This has made us all too prone to concentrate upon some one province of public health work and to create a number of independent agencies or units without any well-knit, coherent and harmonious program, which would unite them all into a broad and comprehensive campaign for the prevention of disease. Such an administrative approach can only be looked upon by an enlightened public health official as impractical and obsolete.

I am sure such a technique does not appeal to the modern public health administrator whose program must go on day after day, month after month, and year after year — so designed, as to give the full benefits to all people of his community without limitation.

Industrial hygiene should not come into public health practice as a new adventure seeking trial, but should be woven into the very fabric of the permanent health safeguards of the community. There should be no barrier to wall off industrial hygiene from sanitation, syphilis, tuberculosis, nursing, medical or other programs of the local health department.

When child hygiene became acknowledged as a distinct phase of public health effort, which brought together under one administrative division the scattered and unrelated attempts to prevent infant mortality, through pre-natal and post-natal care, through supervision of children during the pre-school age, as well as through the grade schools, we had an excellent illustration of a progressive and broadly conceived plan of attack against the causes of illness and death which overtook this age group up to the period of adolescence.

While I do not desire in the slightest to disparage or minimize the value of intensive campaigns in other public health undertakings, yet side by side with these, there should be an equally intense and unrelenting campaign to prevent the causes of ill health, premature bodily decay and death which operate after the healthy boy or girl has grown to manhood or womanhood. Why should the activities of the modern health department fail to reach that child after he leaves school and enters into the industrial and economic world? Our adult population is mobilized in industry. They can be served en masse. Why not then use this entrance as an approach to adult hygiene or industrial hygiene. Industrial hygiene bears very much the same relationship to adult health that school hygiene does to child health.

Many public health officials have failed to appreciate the opportunities which are theirs to advise employers of factory labor concerning improvements which may be made to the advantage of all concerned by the application of our present knowledge of hygiene. This is an opportunity for carrying public health into the factory.

The large industries know of such benefits and are in a position to have expert direction through the employment of competent plant physicians, but the smaller factories are not prepared or equipped to consider such health services of a preventive nature.

In Illinois, 91% of the industrial establishments employ 100 workers or less and are, therefore, not in a position to engage in a health program of preventive medicine, general sanitation and hygiene. This means that the great bulk of our industrial population do not have the benefit of health guidance and supervision. Prevention is dependent on the knowledge that disease occurs.

The health officer has the opportunity, therefore, to stimulate the supervision of health in industry itself. This means that the health officer should be familiar with the industries in his community and the facilities they have or do not have for promoting health.

Furthermore, the health officer already has much in common with employers and factory executives as leaders of the community, and this opportunity can be used to point out the value of health supervision to industry, its workers and the community.

In many fields of public health there are certain environmental factors which may be controlled without the conscious participation of individual citizens; such things as water supply, sewage disposal, etc., need only the general support of the taxpayer to be adequately controlled. In industrial hygiene, which is an all-inclusive adult public health program, there are numerous factors, both inside and outside the plant, as well as social and biologic considerations and others which affect the health of the industrial worker to an important degree, and if these factors were adequately supervised an improvement in the vital statistics of our adult population would unquestionably occur. Therefore, we must recognize that this type of public health activity is not impersonal like the control of some of the other environmental conditions, but involves the personal cooperation of the individuals concerned.

Many local health departments are, at present, too small from the standpoint of personnel to maintain an industrial hygiene unit. This means that these local health departments will probably never have on its staff a physician, engineer or chemist who has specialized in industrial hygiene. Usually such a locality will receive its industrial hygiene services from the state health department's division of industrial hygiene. Yet in spite of this arrangement, the local health agencies must become industrial hygiene conscious and build some form of an industrial hygiene service into its daily public health program.

Now, how to proceed to extend the advantages of industrial hygiene through the medium of local health department personnel. This procedure is the same as that employed for any other health adventures, and that is by education and training of such personnel. The necessary facil-

ities have been established by the state health department and its staff. Here specialists in the field become the teachers to guide, direct and prepare local public health physicians, engineers and sanitarians for the discharge of their new obligations. After they are familiar with the technique of making medical and engineering observations of occupational environments and the worker, the industrial hygiene division of the state health department can supply, when necessary and indicated, in cooperation with the private physician or the plant medical director, additional medical, engineering and laboratory facilities for evaluating and appraising the problem; so that, with this factual data the local health department may continue its contacts with the industry in its jurisdiction.

Let us now consider some of the industrial hygiene services the local health agency can include in its public health program. They can furnish and discuss with plant executives, factory physicians or plant medical directors such items as:

1. Making special studies, tests or examinations which they are not equipped or qualified to perform. These services include the collection of air samples, material analysis, physical determinations of ventilation, illumination and others too numerous to mention.
2. Providing detailed and specific information on toxic manufacturing materials and harmful conditions and exposures.
3. Furnishing industrial health statistics duly interpreted.
4. Correlating work of industrial hygiene programs in plants and setting up uniform procedures.
5. Working with and through plant medical departments to obtain specific plant improvements, better factory housekeeping, sanitation, etc.
6. Stimulate plant medical departments to concentrate on preventive measures.
7. Encourage the plant medical department to interest itself in the worker's life beyond the confines of the factory. This means personal hygiene, recreational facilities, proper diet, habits, etc. This method of health education carries with it many opportunities in a public health program for the worker and the community, as through this avenue we are also able to reach the entire family.

The above concludes in a general way what the local health departments can do to assist their local industrial establishments and so improve its program and facilitate accomplishments.

At this point, let us consider the community health assets that are at the disposal of local health departments and which can be integrated with industrial hygiene.

1. *Communicable Disease Bureau, including Tuberculosis and Venereal Disease.* Here the industrial hygiene unit can act as a case-finding agency in a large percentage of the adult population. This is of especial value in the tuberculosis and venereal disease program as we are dealing with the specific age groups where these diseases are most prevalent. When positive cases are located this information can be turned over to the specific bureaus for the investigation of contacts, home conditions and other epidemiological data. These bureaus can keep the individual under observation and see that proper precautions are taken to keep the individual non-infectious.

2. *Sanitary Bureau:* This bureau can assist materially in providing a safe water supply for human consumption and this indeed is a vital problem as many industrial plants have a dual water system — one a cheap unprotected supply for production purposes and fire protection and one for human use. In such cases it is essential that there are no cross connections providing a means of contamination.

3. *Nursing Bureau:* The field of the public health nurse and the industrial nurse is practically unlimited in industrial hygiene, as it is the nurse who undoubtedly must do most of the follow-up work and nursing supervision in the home. In the latter instance she can be of great value to the official health agency, the family physician, as well as the patient. It is she, too, that has much to do with improving home conditions and sees that orders are enforced.

One of the greatest needs of the moment for undertaking and promoting such a program is also the integration of the services of physicians in private practice. They possess an enormous latent reservoir which can be activated in the name of health education and industrial hygiene. It is urged that physicians in private practice who accept patients from industry be encouraged to work with the local health departments. They should be shown the part they play in giving a

fullness and wholesomeness to the daily life of industrial workers, as well as discovering those departures from normal health. The private physician's office can be a lookout station. In this way he participates in a public health program and encourages preventive medicine. The pediatrician of today may be cited as an example of such a commendable practice.

Industrial hygiene in public health programs also calls for the promotion of local committees on industrial health to be created in each county medical society so that they may act in an advisory capacity to the official health agency interested or actively engaged in industrial hygiene. Since much of the problem lies in the control of the ordinary diseases of adult life, the medical society, through its members, can here again be of great assistance in early diagnosis campaigns, and so decrease the incidence and mortality for this particular group.

In dealing with this problem, the U. S. Public Health Service suggests that the essential factors of an industrial hygiene program should include fundamental research, application of research and education. Most agencies are not equipped to carry on research, but can be fitted to carry out those phases of the program dealing with education and application.

It needs, though, an organized public health demonstration to bring out the amount and kind of adult health services that can be successfully offered. This is your approach to industrial hygiene.

DISCUSSION

Dr. Arlington Ailes, LaSalle: I am glad to hear Dr. Kronenberg's paper. It brings to us with considerable emphasis the fact that this matter of industrial hygiene is no longer on the fringe. We have dealt so intently in the past with saving young lives that we have been neglecting adult life. I think it time that we branch out and think more of the adult and see what we can do towards saving his life. I am impressed with some of the statements made. I have always been under the impression that industrial hygiene dealt mostly with the control of fumes and dust, etc., and their bad effect on health, but the doctor mentions communicable diseases in industry also. I am wondering if I am right in understanding now that the division of industrial hygiene will come in and help us find tuberculosis and syphilis in our factories. I know of some factories that have wonderful housekeeping yet they have tuberculosis among their employees. I am wondering if the doctor means what I think he said in the paper, that the division of industrial hygiene will come into the community

and help the local health officer find syphilis and tuberculosis in these factories.

Dr. A. J. Levy, Chicago: How can the district health officer or health officer assist Dr. Kronenberg in finding those infectious diseases? Is Dr. Kronenberg going to find communicable diseases, such as tuberculosis, and then refer it to the health officer, or vice versa?

Dr. J. J. McShane, Springfield, chairman: If Dr. Kronenberg had a list of all the plants in industry in each man's district, that might be of help, so that you can know what is being carried on, and if there is any new plant that comes up it might be of interest, because most of these men are from around Chicago. Let's hear from Dr. Miller.

Dr. M. H. Kronenberg, Chicago (in closing): I am glad Dr. Ailes raised the question he did.

In certain industrial areas, like Ottawa, where they have silica mills and where you may expect a higher incidence of silicosis among workers, if you can keep tuberculosis out of such a community where you have silicotics, your silicotics will live on and perhaps die of something else.

As to the tuberculosis phase of industrial hygiene, it is the plan to encourage certain industries that may present a high tuberculosis rate to induce their management and their medical department to undertake a case finding program of their own. We always like to have the local health administrator in on such projects if we are going to sell it to local management, and we want the private physicians in on it as well.

In a statewide survey that we made covering some 3350 plants, we were able to secure a list of 187 plants in Illinois that were interested in doing something about syphilis, and that list of plants was turned over to the syphilis control officer follow-up work. Not all of them were actively engaged in taking bloods for serologic tests, but some had started the program and others had talked about it and were considering it favorably; and so it is our purpose to encourage that type of communicable disease case finding, because, as I said, we feel we can accomplish the thing *en masse*. At present we are studying an industry in which the exposure to a certain material that the men work with is conducive to neurologic and psychiatric manifestations. The psychiatric factor as a result of exposure to this particular material is well known. I refer to carbon bisulphide. In the two manufacturing plants we have also encouraged a syphilis control program. Why? Because we explain to them that in the case of an alleged occupational disease, should the man break down with certain psychiatric findings, how would they know whether or not it was due to the carbon bisulphide exposure or due to a syphilitic infection that the man had for some years, unless they had a serologic record. We feel that the best record is to take bloods on all the workers.

As to other communicable diseases that Dr. Levy mentioned, I can use the same example. For instance,

we have encouraged the vaccination of employees in plants but always, with the cooperation and collaboration of the physician or the part time factory physician or, if they do not have any, to call in one of the local men in town to do this work.

I feel that complete public health work as we look upon it other than the occupational diseases, is an all-inclusive health program for adults, and the best we can strive for is not to set up health projects singly, but instead conduct our activities jointly, then call to the attention of management and labor the need for cooperation in these health projects that are set forth by our Springfield office. We as a division of industrial hygiene have the opportunity to meet with these people on a common ground. We feel we are close to them and, if we enlighten them, we gain their confidence; they will follow our advice.

Dr. Ailes: Is this matter of syphilis and gonorrhea of sufficient public health importance to appeal to industry for their pecuniary gain?

Dr. Kronenberg: Yes, from the standpoint of absenteeism, absolutely. Every time a man is absent, if he is gone for a day or a week or ten days, it means some break in the production line. It means putting on an apprentice or starting to train a man. It has been estimated that it costs industry two hundred dollars every time they have to break in a new man on the job, and for that reason progressive management today looks upon the diseases of ordinary life as being just as important to them as the occupational diseases. There is at present a desire by the Air Hygiene Foundation of America and the National Association of Manufacturers to promote health in industry on the basis of the ordinary diseases, as well as the strictly legal occupational diseases. In 1936 we were hysterical only about occupational diseases; that was the theme of that year. Today we see efforts to have a general public health program for industry. The most encouraging part of this field is to walk into the first-aid room or into the doctor's office in industry and see a whole list of different educational pamphlets on such subjects as tuberculosis, venereal disease, cancer and the like, all available for the worker and his family.

CHRONOLOGICAL

The amateur artist was painting — sunset, red, with blue streaks and green dots.

The old rustic, at a respectful distance, was watching.

"Ah," said the artist, looking up suddenly, "perhaps you, too, Nature has opened her sky-pictures page by page? Have you seen the lambent flame of dawn leaping across the livid east; the red-stained, sulphurous islets floating in the lake of fire in the west; the ragged clouds at midnight, black as a raven's wing, blotting out the shuddering moon?"

"No," replied the rustic, shortly; "not since I give up drink."—*The Sacred Heart Review*.

BUTESYN PICRATE DERMATITIS WITH CASE REPORT

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Butesyn pierate is widely used by the laity in the treatment of burns and scalds. Their belief in the efficacy of this remedy is supported by the recommendation of their druggist. True, the druggist warns that occasionally a reaction may occur, but the average man on the street pays little heed to this. In not a few instances butesyn pierate may be used with impunity, produce gratifying relief and aid in healing minor burns. A certain percentage of individuals will, however, when exposed to butesyn pierate through the broken skin, manifest a startling reaction. The clinical picture develops rapidly and the etiology may remain obscure unless the possibility of butesyn pierate sensitivity is borne in mind. *There are no mild cases.*

CASE:

B. H., a 51-year old white female, sustained a first degree burn of the right forearm. The injury was shortly afterwards treated with butesyn pierate. Twelve hours later the burned area became painfully swollen and stiff. There was a simultaneous involvement of the face. The eyes were swollen almost shut and intense *itching* and *burning* were complained of chiefly in the facial area.

Examination revealed an erythematous, edematous, vesicular and weeping eruption. The lesions were papular, more or less circinate, varied in size from a pea to a ten cent piece, and suggested urticaria. The entire face was involved, the lesions extending to the sides of the neck laterally, and upper chest region anteriorly. The eyelids were greatly swollen and the conjunctivae were markedly injected. The facial eruption showed a yellowish tinge, although no picrate had been applied to the face. A yellowish staining of the nail bed of the fingers was noted. Symptoms of local itching and burning were bitterly complained of and a marked mental irritability was noted. Temperature was not elevated, pulse and respiration were normal. R. B. C. 4,300,000. W. B. C. 7,600 with 60% polymorphonuclear leucocytes. The urinalysis revealed nothing abnormal.

Treatment consisted of wet compresses of aluminum acetate solution. The acute stage subsided in 48 hours, thereafter calamine lotion was applied for three to four days. A branny desquamation occurred about the second day and the symptoms gradually disappeared along with the eruption.

DISCUSSION:

The majority of cases of butesyn pierate sensitivity reported in the literature are character-

ized by symptoms which are both *local* and *general*.

LOCALLY:

The early lesion consists of irregular macules and papules purplish yellow in color, rapidly becoming vesicular and urticarial. The characteristic lesions vary in size from a pea to a dime and the intervening tissue appears erythematous and edematous. The site of predilection is usually the arms, face, neck, chest and, occasionally, the trunk. The intensity of the eruption is characterized by exacerbations and remissions. The initial lesion appears at the site of application. Typical lesions having a characteristic yellowish coloration will appear in regions in which the picrate has not been applied. These dried yellow crusts are believed to constitute a source of reabsorption. A permanent yellow staining of the nails of both hands and feet is diagnostic.

GENERALIZED:

The local reactions are followed by generalized allergic cutaneous manifestations and central nervous system symptoms. Marked nervous irritability is quite common. Severe cases have been reported in which unequal pupils, scanning speech, and spastic gait developed. Generally the temperature remains normal or is but slightly elevated. Pulse is between 90-100 degrees. Anorexia is common and nausea may occasionally supervene. The blood picture is unaltered, although picric acid may be recovered in the blood serum and spinal fluid of persons susceptible to this chemical.

MODE OF ACTION:

N. Riley Jackson has reported five cases of butesyn pierate sensitivity and believes from a series of experiments conducted by him that 4 per cent. of all persons will manifest symptoms of susceptibility to this chemical. He believes that the dermatitis occurring at a distance from the initial application is produced by a protein picric acid transmitted by the blood stream or lymphatics. The picric acid is split up into its component parts. Here the trinitrophenol radical or some of its modifications reunite with the epithelial cells.

Malmejac conducted a series of experiments on dogs. When a lethal dose is given these ani-

mals die from respiratory paralysis. With sublethal doses it was demonstrated that picric acid appeared in the blood stream as a protein combination. Furthermore, the trinitrophenol radical can be broken off from the protein complement and redeposited as a protein picricinate in a new cell. This process can be repeated again and again.

The redeposition theory consists of the union of trinitrophenol with fixed cells. There is a splitting off and transplantation by the lymph and blood stream to distant places. Here it unites with totally different cells, producing a manifestation resembling the former condition.

TREATMENT:

Consists chiefly in withdrawing and discontinuing the butesyn picrate. A 5 per cent. aluminum acetate solution may be used to advantage as a continuous wet compress or until the acute local reaction subsides. This usually takes three to four days. Either cold cream containing zinc oxide or calamine lotion may be used until the condition has entirely cleared up. Sedatives are often necessary to control the C. N. S. irritability.

CONCLUSIONS:

(1) Since 4 per cent. of individuals are susceptible, the use of this chemical by the laity in treating burns should be discouraged.

(2) Small amounts of butesyn picrate will produce a violent reaction in sensitive people.

(3) In the preoperative preparation of the abdomen, especially in children, the surgeon should skin test for sensitivity 24 hours before operation. Better still, avoid using it entirely.

(4) Absorption takes place by lymphatics and blood stream with the deposition of protein picricinate in distant body cells.

(5) An eruption following treatment of a burn with butesyn picrate should immediately excite suspicion of sensitivity.

BIBLIOGRAPHY

Jackson N. Riley

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"Grandma," said Brewster's young son one day, "which of my parents do I resemble?"

"Both," the grandmother answered. "You have your mother's remarkable capacity for spending money and your father's absolute genius for not making it."—*Kansas City Star*.

THE PSYCHOLOGY OF DEAFNESS IN CHILDREN

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The gropings of a blind man no longer make a comic turn upon the stage. Apparently, they did some three centuries ago when Shakespeare wrote his "Merchant of Venice." The time has gone, too, when visible suffering can raise a laugh. Yet the mental and therefore the invisible struggles of the man who is deaf, or the woman who sits lonely among her chattering family because she cannot catch what they say, or the child who sits forlornly in the corner because his family have relegated him to this position because they think he is a blight on their family tree, are still considered humorous.

Why, you may ask, should anyone besides an otologist, psychologist, or psychiatrist presume to discuss the subject of "The Psychology of Deafness in Children?" The answer is evident. To the pediatrician and family physician is entrusted the care of more than 90 per cent. of all children. And, since deafness, partial or total, affects as many as 3,000,000 children, the pediatrician and family physician who is to care for these children must be usefully informed about them.

Ten years experience with the children in a residential school for the deaf, whose daily attendance has averaged between 500 and 600, and 70 per cent. of whom are under 15 years of age, has led me to summarize some of my observations. To one who is not expertly trained in psychology and psychiatry such observations have been exceedingly interesting. Medical literature, with reference to deafness and the psychological reactions associated, lends very little assistance to such a study.

In order to avoid confusion in terminology I wish to preface my remarks with a brief statement relative to the classification of deafness. At the conference of Executives of Schools for the Education of the Deaf in June, 1937, the committee on nomenclature reported as follows:—

"The committee is very much concerned over evident effort of certain groups and individuals to classify the deaf and hard of hearing, not from the true physical angle, but from the wholly false basis of ability to speak and to use language. In other words there are many who are developing a new and most

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damaging terminology. They say that the deaf are those born without hearing or who lose it before the acquisition of speech. They go on to say that those who suffer a hearing loss after speech and language have been established are hard of hearing. They are very vague in their wording but leave the layman and the parent with the impression that the child who loses hearing after speech and language have been acquired (the Adventitiously deaf) is hard of hearing. This is taking place in different parts of the country today and if continued and followed by teachers will prove a sad day for the deaf child's education and his future happiness. The committee desires to go on record and begs the Conference to do likewise as condemning such misleading and erroneous terminology."

"Because of the general use and misunderstanding, because of the desire of the profession to lessen the possibility of confusion, and because the terms are obsolete and are not commonly used by experienced educators, it is strongly recommended as part of this report that the following terms no longer be considered in our terminology, and that their use henceforth be discontinued: Deaf-mute, deaf and dumb, semi-mute, semi-deaf, and mute. Furthermore, in the same way, the term "deafened," which has been used to designate the hard of hearing, has confused many and has been used by individuals to mean deaf. The term is not needed; it is superfluous and confusing, and acts as a protection to certain advertising agencies to the detriment of the deaf."

1. **THE DEAF:** Those in whom the sense of hearing is non-functional for the ordinary purposes of life.

This general group is made up of two distinct classes based entirely on the time of the loss of hearing.

(a) The congenitally deaf — those who were born deaf.

(b) The adventitiously deaf — those who were born with normal hearing but in whom the sense of hearing became non-functional later through illness or accident.

2. **HARD OF HEARING:** Those in whom the sense of hearing, although defective, is functional with or without a hearing aid.

I present the findings of this committee which were adopted by the conference to show the interest and activity of that group.

George Shambaugh has said, "No one knows the extent of the World of Silence." I would change this to say, "No one knows the loneliness of the World of Silence." Only those of us whose work puts us in close contact with deaf children seem to appreciate the many heartaches which go on in those children. Heartaches which are so often hidden behind a mask of innocent and

unconscious happiness which is the normal heritage of all children. Often the child does not know that he is deaf, very often he thinks he is actually stupid because he does not get along as well as the other children, with the result that he develops a feeling of inferiority. Those whose hearing has been defective from birth or early childhood and is chronic, must endure the condition to the end of their days — without respite or relief. Probably no one but the patient himself can fully understand the mental strain imposed by defective hearing. Even his nearest relatives may fall into the delusion that he could hear what they say so much better if he would only take the trouble to attend more carefully. They may come to think that he gives his friends unnecessary trouble by a certain mental laziness.

In proportion to the severity of their deafness most patients are forced into a degree of alertness and effort greater than that of people with normal hearing. They are, as it were, forever at the end of a very bad telephone line. The most casual remark comes to them in an incomplete, often in a distorted, form. They struggle to keep up with general conversation by qualities akin to those of a detective piecing together imperfect clues, half a phrase here and another there, to gain somehow or other the sense of what is said.

In a certain proportion of instances, such an unending struggle becomes beyond the capacity of the patient to sustain. In whole or in part, he gives it up and becomes more or less isolated, acutely unhappy, or apathetic. But it is clearly wrong to say that such a patient is lazy or inattentive. At the onset of deafness every sufferer makes an effort to hold his normal place in life. Despair and relaxation of the struggle only begin as the result of persistent failure.

How is the deaf child to know that he does not hear well? He thinks of his ears only as a piece of skin with many folds which hangs on the side of his head and must be washed so that he may pass maternal inspection before going to school. To him these folds of skin have no other purpose, and only after many years, years of endless strain on the nervous system it is found that his hearing mechanism has been at fault.

Hearing and seeing are the two senses which give us information of the surrounding world, while taste, touch, and muscle sense tell only of the things with which we come into immediate

contact, and smell, though a sense for remote objects does not serve man greatly in that capacity. The world of the child who is both deaf and blind is pitifully small. He moves in the larger world but is not a part of it.

The tragedy of blindness is widely recognized, because the disabilities of blindness are frequently brought home to us when we find ourselves in darkness. But deafness strikes no such cords of sympathy. Yet the deaf are at the very least as handicapped as the blind, for deafness is isolation and utter loneliness in a large world, the joy of which springs from social contact. Deafness in many instances is an even greater handicap because the inability to hear frequently results in the inability to comprehend. The deaf much more than the blind are thrown on their own resources. Gregariousness, the most precious of joys, is denied them. They stand isolated while the blind join in the melee of life. To them is lost the most vital stimulus, the sound of the spoken voice, which brings language, sets thoughts astir, and keeps us in the intellectual company of our neighbors.

Children are normally social beings, they receive biological sustenance from gregarious living. When the deaf child finds he can no longer communicate with or understand his companions is it any wonder that he feels isolated, that he is depressed, that he feels persecuted?

That hearing and speech are important in the normal development of a child may be seen when we compare the deaf with the hearing child between the ages of two and seven years. It will be found that the deaf child is at a stand-still while the hearing child is developing rapidly. Every moment of his awakening life he receives items of education through his hearing, so that not only are speech and language being continuously impressed upon his cerebral centers but by ceaseless reiteration they are stored up as sensory and motor memories. Thus the language-appreciating and language producing centers being intimately related, speech becomes automatic before education of the centers concerned with writing and more difficult language training begins, centers of later development in the history of the race than those of mere speech, and preceded in the normal child by a pre-speech era of gesture language. It is this pre-speech era which becomes more fixed and consequently easier of use in the deaf child, to the detriment

of oral training. Automatic speech is of high importance, and the training of the speech center in those children who become deaf at an early age would help them to approach the normal child's automatism.

The value of hearing in the physiological development of the normal child is shown by comparing the blind with the deaf. The former has far less difficulties in education. A main gate of instruction is closed to him, it is true, but it is one by which general effects rather than exact thought impressions reach the brain. If he hears, the speech progresses as rapidly as in the normal child, and his intellectual development proceeds at a nearly equal rate. Children who become deaf early in life obtain their general effects through the eye, but owing to their aural defect, they can neither obtain impressions of exact thought nor formulate their own thoughts in exact terms, so that they begin school on the intellectual state of a child of two. Plainly put, the deaf child's intellectual development is arrested for four or five years.

The study of deafness by modern experimental method is bringing about an entirely new conception of its nature. Probably the most important advance is in our knowledge about defects of hearing which do not amount to total loss. In this field, the gravity of the handicap, its stunting and withering effect on mental development and mental well-being in children is being shown as never before.

It has long been generally realized that children totally deaf from birth or infancy cannot learn to talk by natural means. They are taught to speak by laborious and artificial methods, and their whole education, although in many instances successful to an amazing degree, is based on artificial processes. Today it is plain that there is no such thing as a clear cut border-line between the "deaf and dumb" and that large section of the population of every age which suffers from defective hearing. The effects of deafness are to be seen in the little untaught deaf child, whose only method of communication with his parents is often crude gesture, and who knows nothing outside his own tiny world of sense experience.

A second important fact lies in the hereditary tendencies to speech. We represent a long line of speaking ancestors, the first of which existed untold ages ago, and are the outcome of an

evolution which has slowly elaborated those parts of the central nervous system concerned with speech from the beginning of our remote ancestry. The power to develop similar structural connections of nerve-cells and fibers has been handed on through countless generations, and rendered more and more perfect in each, until we are born with a potentiality to develop as complex and perfect nervous arrangement as those of an individual who has preceded us. Thus the speech centers have been made more apt for expressing exact thought, and there is not only a hereditary tendency to speak, but also a hereditary tendency to develop the general faculties through and by speech.

The deaf child is engaged in a continual struggle to make himself understood and to understand others, but unlike the hearing child and the blind child, his natural yearning, including hereditary tendencies to speak, go unsatisfied.

Secondly, there is the effect of deafness on the patient's own speech. This involves a series of problems. Speech has been described by a great neurologist, Sir Henry Head, as a "March of events, acquired step by step in the life of the individual." It is true that the earlier years of life are those in which speech development is most rapid. The normal child of five speaks with fluency and with a considerable vocabulary. He has not, however, finished learning to talk. That is a process which continues without stop so long as life lasts. Not all of them are adopted and used, but even in old age, the listener with normal hearing probably makes some of them his own.

Besides this, the meaning of known words and expressions is constantly being enriched by further experience. The word "Mississippi," after the inundation of 1937, acquired new meaning in the minds of those who heard an eye-witness broadcast, a description of burst banks and flooded town. Still more did its meaning alter in the minds of those made homeless by the floods.

Karl Menninger asks: — "Has hearing more to do with the life of a man than that of mere auditory orientation." It certainly has. The vast majority of deaf individuals, some time during the course of their lives develop a feeling of inferiority which is exceedingly hard to overcome. When we add to this a peculiar sensitiveness, we have a difficult problem with which to

deal. Of course, we realize that all handicapped individuals feel that life owes them something, but the adjustment towards a handicap seems more difficult with deaf persons than with others. Being without the intellectual companionship and feeling that they are not sure of themselves when it comes to understanding what is said, adding to this a certain amount of confusion and nerve strain the deaf child becomes metamorphosed. He loses his cheerfulness, he resents the actions of others, he feels his isolation.

Ruth Brickner in her very excellent and scientific treatise states that there is a psychiatric principle that under unbearable emotional stress an individual will break down in the direction of the weaker supports of the psychic structure. All of us who are dealing with the deaf know that there occurs all too frequently emotional explosions. By this, I mean an unstable mental condition, which is very often caused by the deafness itself which forces the patient into an apathetic state almost bordering on melancholia. Such a condition may result in a complete nervous breakdown or insanity. Dr. Brickner claims that the deaf suffer from depression and a feeling of persecution. "For to the unconscious mind, that level of our emotional life in which primitive love and ego trends have their roots, acquired deafness is a mutilating blow to which the primitive response is rage and hatred." Add to these two states a feeling of isolation and is it any wonder that these children present the problems that they do.

The problem of deafness is an important one and has received little or no consideration, either from the family physician, pediatrician or specialist until the past few years. For centuries the deaf child was considered a hopeless problem. The child of school age, who could not hear, was usually placed in the class for those who comprehended slowly or else relegated to a seclusion which made life almost unbearable. In those tender years it was impossible for him to appreciate that he was suffering from a definite handicap. Until recently, there was no concern, neither child, nor parent, nor doctor appreciated the seriousness of the condition. Draining ears usually received some consideration, but this was confined to an attempt to stop the discharge. There is an old adage about there being two types of deafness, one (curable) due to wax in the ear, and the other (uncurable) is sent to the

otolaryngologist. Fortunately this pessimistic teaching is no longer true.

Schambaugh has said "Childhood is rightly regarded as the most precarious period in life so far as the ears are concerned. Early childhood is the danger period in the development of those profound defects of hearing that result in deaf-mutism." Sixty to seventy per cent. of deaf children become deaf before the age of three and eighty per cent. before five years of age. The pre-school years are the precarious years.

Then is it any wonder that embarrassment, reticence, inferiority, hatred, rage, and all the emotional reactions should develop in the child who cannot take part in the activities of the family, the games with his companions, or the story tellings of his associates.

To add to his handicap his parents, too, often look upon him as a burden, put him in a corner, or a secluded room and make him feel he is not wanted.

A discussion of any phase of the subject of deafness is not complete without reference to prevention. I need not emphasize that many of the psychological reactions in the deaf child may be helped if proper psychological procedures are employed. The psychiatrist who understands children and who can fathom the problems of the deaf child is a most valuable consultant.

In very recent years the beginning of formal education of the deaf child at an early age, namely the pre-school or kindergarten classes, have aided greatly in the prevention of many of the psychological problems.

More important, however, is the prevention of those diseases which produce deafness. It may be beyond the resources of modern epidemiology to stamp out nasopharyngeal infections and the infectious diseases, but much has been done and more will be done. Proper prenatal care may prove more beneficial than is at present predicted in the development of the fetus. Proper care during infancy and childhood will do much to improve the health of our babies. Combine this with immunization against diseases for which we have immunizing agents and which predispose to middle-ear infections, namely, whooping cough, scarlet fever, diphtheria, measles and smallpox and much will be accomplished in the prevention of otitis media and its complications. Add to these the early diagnosis of communicable diseases and the prompt admini-

stration of anti-toxins, vaccines, anti-sera and convalescent sera and in many more instances will these dire complications, which are so frequently more serious than the disease itself, be prevented.

The early diagnosis, prompt and energetic treatment of epidemic cerebrospinal meningitis, which, to name one disease only, is the cause in twenty per cent. of all adventitiously deaf will certainly diminish the number who have their auditory nerve destroyed by a toxic neuritis.

Within the province of the family physician and pediatrician lies the early diagnosis of communicable diseases and infection of the middle ear. Many of these need not occur if the nasopharynx of the healthy child is not allowed to become a center of latent sepsis.

When the conflagration has started and has spread to the middle ear, it is well to remember that it is not a minor condition which is being dealt with, but an insidious threat to hearing and even to life. Much marring of life can be prevented and much happiness brought about by the prevention of those diseases which so frequently result in deafness in children.

DISCUSSION

Dr. Robert H. Gault, Evanston: Dr. Drennan has very aptly referred to 3,000,000 children of school age in the United States who have defective hearing. That is the figure that has been furnished by Dr. Harvey Fletcher of Bell Telephone laboratories in New York City. It is based upon examinations of hearing in schools in New York City and elsewhere.

I lately took occasion to send one of my students to consult the Psychological Abstracts, — a journal that publishes abstracts of the Psychologic literature produced in the United States, — and I asked him to find out the number of articles of a scientific nature that had been published within the preceding five years and which could be interpreted as dealing with the fundamental problems of education generally. From among these I asked him to select those which dealt with basic problems of the education of the deaf and hard-of-hearing. He found that about five-eighths of one per cent. of all this literature in the United States is devoted to the fundamentals of teaching and training these 3,000,000 children who suffer from defects of hearing. To that situation I believe we may in very large measure trace whatever backward state of education of these classes may be found to exist. I am not disparaging teachers of the deaf. I am sure that in the last several years they have improved their work immensely. But I believe they would get on much better were the rest of us whose business it is to carry on research, doing what lies in our power to do.

I want to mention one thing that occurred to me while Dr. Drennan was reading his thoughtful paper. You and I have as a matter of course learned to use two or more senses in co-operation. I was talking some time ago with a friend of mine who spoke of the difficulty he had had one evening a short while previously in hearing what the actors in a play were saying on the stage. When he took up his opera glasses and saw their faces distinctly he heard them much more clearly than before. His eyes helped his ears. It is so with us in ordinary conversation. On one occasion I was seated near a woman about forty or forty-five years of age who is very close to being totally deaf. I remarked to her "You are a very good lip-reader." She said: "Do you see what I am doing with my hands?" She was grasping the arm of the wooden chair in which I was seated. She said further: "I see your face and at the same time I feel your chair vibrate with your speech and that helps me to know what you say." On her own initiative she had got hold of an important thing and had confirmed in her own experience the results of experiments that I had performed in my own laboratory which had shown me that when the deaf are trained, through whatever avenue, to feel the vibrations that correspond to speech while at the same time they observe the speaker's face they can add from fourteen to twenty-five per cent. to their expertness in understanding spoken language.

A day or two ago I received a letter from a woman in Los Angeles who described herself as totally deaf. She said that a friend had given her a hearing aid with a bone-conduction appliance. She got no satisfaction from using it in the ordinary manner but when she held the bone piece in her fingers she could feel the vibrations of spoken language and that thus she was aided in understanding speech.

So it is, I am more than ever convinced, that there may be a deal of profit in pushing experiments that are aimed toward discovering and perfecting ways and means for promoting the co-operation of sense, such as vision and touch or vibration. If those of us whose business it is to go about research will but stick to it we shall find the way and it will be of great advantage to the profoundly deaf in relation both to the interpretation and the production of speech. This is one thing that we are doing in my laboratory.

I shall mention another piece of work that we are doing. We call it the "re-education of hearing." I have been visited again and again, as you have also, by people who have recently purchased a hearing aid and who complain that they are not obtaining from it all the benefit that they think they should have and many of them are greatly discouraged. Some of them are ready to discard their instrument. Now if you have been going on with defective hearing during a period of years it is most probable that your defect is more serious in one range of frequencies than in another. Your audiogram shows the people who deal with hearing aids in what part of the range you need correction. Usually they are able to make

an aid for you which will bring auditory stimuli to you in a much more normal relation of pitch and intensity than that to which you have been accustomed. From that moment your auditory experience is so unfamiliar to you that you are unable to make it out and you become discouraged.

In our laboratory we are trying to devise ways and means whereby we can help such people without too great labor to train themselves to use the hearing aid that should be a boon to them. This is what we call "re-education of hearing. I think it is a good track to follow for some time to come.

You men who are daily treating your patients are confronted with innumerable problems of a medical nature of which I am totally ignorant. And these same patients bristle with psychologic problems. In a broad sense they can be described as problems of learning and of personality development. So little has been done in this area that we can truthfully say the surface has been no more than scratched.

RENAL CYSTS COMMUNICATING WITH THE PELVIS

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CHICAGO

We had intended this afternoon to present a few rather unusual anomalies of the urinary tract, there being in several cases complicating features lending clinical interest thereto. In view of the limited time we shall present only one of these. This is the phenomenon of cyst in the renal parenchyma communicating with the pelvis, of which we shall present a series of four cases. Ordinary solitary cysts of the kidney, although not frequently demonstrated radiographically are not infrequently found at autopsy or in surgically removed kidneys. These as a rule are quite small. Cysts of the kidney often reveal no change in the pyelogram; in other cases, where the cyst is large or located near the renal pelvis, a pressure defect may be noted and in some cases a modification of the adjacent calyces. In cases of large cysts a change in the position and axis of the kidney may result. In such cases the large cyst may be palpable through the abdomen. Some of the smaller solitary cysts are believed to be on a retention basis, resulting from occlusion of the uriniferous tubules; they may, in some cases, be a by-product of chronic nephritis. In other cases, they are believed to be congenital.

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Cysts communicating with the renal pelvis are very rare. In fact Young and Waters in 1928 stated that such communication never occurs in the case of solitary cyst. Since then a few such cases have been reported in the literature. In a period of over six years at the Cook County Hospital we have seen only four such cases, these occurring within a period of one year. Only one of these was proven surgically; in several of the other cases difference of opinion may exist as to interpretation. These cases were all under the care of Drs. Dorrin Rudnick and James Choy of the Genito-urinary department of the Cook County Hospital.

Case 1 was that of a female patient, aged 41, who was well until a year previously, when she had an attack of nausea and abdominal soreness, lasting a week. She was then well until three months before entering the hospital when she had a knife-like pain running along the course of her lowest rib from the spine to the middle of the abdomen. The pain lasted three weeks almost continuously. No nausea was present. Then, a month before entering the hospital a similar pain occurred in the left side and nausea with vomiting occurred persisting until her entrance into the hospital.

Physical examination revealed a well developed, well nourished white female, not acutely ill. Blood pressure 125/75. Temperature 98°.

Liver was slightly palpable two fingers down but the physical findings were otherwise essentially negative including the Murphy punch.

Urine revealed albumin and a few red and white blood cells, once. Was negative twice. Acetone 4-plus was present on entrance.

The Kahn test was negative. Temperature 98-100°. Red blood count varied from three and one-quarter to three and three-quarter million. White blood count 4600 to 10,600. Non-protein nitrogen 32.

Cystoscopy revealed a normal urethra and bladder mucosa.

Catheters passed unobstructed on either side. The culture from the right side was negative. No specimen was obtained from the left side. A retrograde pyelogram was done.

The preliminary film (slide 1) revealed four calculi to the right of the first lumbar vertebra, which, so far as radiographic appearance was concerned, could be gall stones or renal calculi. Slide 2 in which the renal pelvis was partly filled with opaque materials revealed these calculi to be in a large cyst-like area communicating with an upper calyx. Slight periostitis was also noted in the 12th right rib. Slide 3 revealed a well-defined oval cystic area in the upper pole of the kidney pelvis communicating with the superior calyx and filled with opaque material. The calculi could be faintly seen through this opaque medium. The left pyelogram revealed essentially no abnormality except that there appeared here also to

be a very small cystic area which communicated with the inferior calyx. The patient went to surgery, a nephrectomy being done by Dr. Rudnick. The cystic area was found in the upper pole containing four calculi. Slide 4 reveals the opened kidney. The pathological study of the specimen was made by Dr. Alex B. Ragins. He reported as follows:

Specimen consists of a kidney, previously opened. 11.5 x 5.5 x 4 cm. In the region toward the upper pole the surface contains a cystic mass previously opened 2 x 2 cm. in the region of which the capsule is adherent. From the remainder of the surface the capsule strips with ease and the surface is light purple-gray to light tan-gray. On section, the cystic mass replaces the cortex and cortical portion of the mass is 2 mm. in greatest thickness. The cyst cavity measures 2.2 cm. in transverse diameter and 2 cm. in vertical diameter. Inner lining is smooth, light, purple-gray to pinkish-gray. Toward the pelvis in the region of the cyst is a needle sized opening which communicates with one of the calyces. This tract is 3 mm. in length. Pelvis of kidney is pale gray with pinpoint up to 4 mm. in diameter purplish-red areas.

Ureter: .8 cm. in circumference at utero-pelvic junction. Mucosa is pale gray with submucous hemorrhages.

Gross diagnosis: Cortical cyst with communication by a small fistulous tract with a calyx of the kidney. Microscopic study reveals the lining membrane to consist of several layers of transitional cell epithelium. There are present very slight focal pyelonephritic accumulations of round cells. His conclusion was that the cyst was congenital in nature. The finding in the left pyelogram suggesting a possible small cystic area also on this side tended to confirm this.

Case 2 was that of a white male, 28 years of age. He had a first attack of pain in the right lower quadrant, one and one-half years previously, this not being preceded by generalized abdominal pain. The attack lasted three to five hours. He had recurrent attacks since that time, these at times lasting 24 to 48 hours. During the few months before entering the hospital the patient had three such attacks, these being similar in nature but with the pain in the left lower quadrant instead of the right. These lasted ten to fifteen minutes and were associated with nausea but no vomiting. He gave a history of frequency, six or seven times daily with bilateral lumbar pain.

Examination revealed the patient to be not acutely ill. He had slight tenderness in the McBurney area, but the Murphy punch was negative. The other findings were essentially normal.

The temperature varied from 98.4 to 100°.

The tentative diagnosis made by the examining physician was that of an interval appendix.

The Graham Cole test revealed a non-visualization of the gall bladder. Three small opaque oval shadows several millimeters in diameter were seen to the right of the first lumbar vertebra. So far as this radiographic finding was concerned, these could be either gall stones or renal stones. Lateral views were taken

but the shadows were not demonstrated. Several films of the K. U. B. tract (slide 5) were taken and the opaque areas described appeared to have a constant relationship to the kidney outline, being in the projection field of the upper pole.

Because of the frequency, cystoscopic study was made. There was found an increased vascularization at the neck of the posterior urethra. The verumontanum was swollen and edematous and the ureteral orifices were injected. The right catheter appeared to meet an obstruction 20 cm. up but the function was good on either side, the red dye showing in three minutes on the right side and in two on the left. The urine revealed no pathologic findings and the cultures of both specimens were negative. A pyelogram was done.

The preliminary film revealed findings as described above. The right pyelogram (slide 6) revealed a small oval area communicating with the upper calyx, filled with the opaque medium. By comparison this was seen to be in about the same region as the calculi previously described. The findings were interpreted as those of a solitary cyst communicating with the renal pelvis and containing three small calculi. The calculi were thought to be in the kidney area rather than the gall bladder for three reasons: 1. the relationship to the kidney outline was constant on a number of the films 2. the shadows were not seen on the oblique view (slide 7); had they been anterior to the spine they would probably have been visualized, 3. they were not seen to be outside the area of the pyelogram in either the A. P. or oblique views. They were considered to be in the cystic region after comparison between the flat film and the pyelogram; they were here seen to be in the projection field of the cystic area. The question as to whether or not the area was really a cystic area communicating with the pelvis or a dilated calyx with constriction of the adjacent infundibulum may be raised. This cannot be positively determined but the round contour of the area would point rather to a cyst.

Case 3 was that of a white male of 34, who was well until nine days before entering the hospital. He then developed colicky pains in the upper abdomen especially in the right upper quadrant; these developed while he was riding in a car, and continued as cramp-like pains. He vomited and went to bed. The pain lasted 36 hours. He then developed cramping colic through the entire abdomen, which continued for eight days. He had no bowel movements for three days after the onset of the pain but these were regular since. There was no history of hematuria.

Physical examination was essentially negative. The red blood count was 3,900,000 and the white blood count 5050. The urine revealed a specific gravity of 1.018. No abnormal findings were present. Because of his being a painter the possibility of lead colic was considered although the blood and bones gave no characteristic findings.

An x-ray of the abdomen revealed a number of

calculi thought, at first, to be in the gall bladder (slide 8).

The patient was cystoscoped and the urinary bladder was found to be grossly normal. The red dye came through on the right side in four minutes and on the left in five. A right pyelogram was made. This revealed a rather large oval cystic bulge from the lateral aspect of the upper calyx of the renal pelvis (slide 9). The lateral view revealed it to be anterior. (slide 10). The stones were not seen outside the renal pelvis area on either the A. P. or lateral pyelogram. This suggested that they were present within the region filled with opaque material. Comparison with the preliminary film suggested that an aggregation of this size could only be within the cystic region described. We concluded as a result that the calculi were probably within the cystic region. The question may arise as to whether or not the area described is really a cyst communicating with the pelvis or whether it is just an anomaly in the contour of the renal pelvis since it appears to be continuous there with there being no intermediate narrowing as in the previous cases. This, however, would be a question rather of terminology than one of practical significance.

Case 4 was that of a female patient of 27 who had previously been in the hospital because of dementia precox. She was admitted as a gastro-enteritis, giving a history of pain in the right upper quadrant and right lumbar area —

frequency
nocturia
polydypsia
fever and chills
headache

for three days.

She had had a cough for two weeks and vomiting and diarrhea for the past day.

Examination revealed a well-nourished white female, not acutely ill.

The temperature ranged from 101 to 102°. The pulse was 88, respiration 24 and blood pressure 74/60.

Palpation revealed the left kidney to be not palpable, the right being palpable. The Murphy punch was definitely positive. A slight tenderness was present on deep palpation in the right upper quadrant. The spleen was palpable.

Urinalysis revealed albumin (2 plus) once and absent on two examinations. The number of white blood cells in the urine was within normal limits. No chemical blood was found at any time. The urine cultures were negative as was the blood culture.

The preliminary impression as the patient entered the ward was that of perinephritic abscess.

The following day the temperature dropped to 98° and 99°.

Cystoscopy was done by Dr. Rudnick. The urethra was granular throughout and the trigone was quite inflamed. The bladder was but slightly involved but the ureteral orifices were edematous, especially the left. They were catheterized easily. Obstruction was encountered on the left side about 20 cm. up but this

was easily passed. The red dye passed through in six minutes on the right side. No secretion was obtained on the left. Study of the urine from the right side revealed very much pus. *B. Coli* were found on culture. Bilateral pyelogram was done (slide 11). Lateral to the right renal pelvis within the midportion of the kidney there was seen an oval shadow 5.5 x 6.0 cm. in diameter containing opaque medium. There was considerable spreading of the upper calyx from the lower by the extrinsic pressure on the pelvis, one of the inferior calyces being compressed. In the left kidney there was seen evidence of an extravasation, which was absorbed on a later pyelogram (slide 12). This later left pyelogram also revealed a small oval cystic area 0.5 x 1.0 cm. in diameter filled with opaque material and communicating with the lateral portion of the upper part of the renal pelvis below the superior calyx, there being a narrowing proximal to this area.

In this case it may be of interest to note that the preliminary specimens revealed no pus in the urine but after the temperature had dropped to normal and the patient was catheterized much pus was found. The significance of this will be discussed later.

In this case it may be necessary to differentiate between a cyst and a renal abscess which has broken into the pelvis. The sharply defined periphery of the area is strongly in favor of the interpretation of a cyst which communicates with the pelvis. The spreading of the calyces by the pressure instead of invasion thereof by destruction of the intervening parenchyma also favors this interpretation. The small cyst on the other side is also in harmony therewith. Infection was evidently present and will be referred to later. Patient could not be surgically treated because of her mental state and left the hospital after improvement occurred.

In the four cases cited of solitary cysts communicating with the renal pelvis three contained stones of varying number. In these cases it is quite possible that the symptomatology was due to the calculi rather than to the cyst directly. In the fourth case the cyst presumably became infected and the symptoms were due to toxic absorption when occlusion occurred, the temperature dropping to normal when the drainage became adequate through the ureter. This conclusion appears to be warranted by the fact that an early examination revealed a normal number of pus cells in the bladder urine while in a later examination the urine from the right ureter was loaded therewith. It may be a question as to whether or not, in certain of the cases described, some of the symptoms were due to independent factors. They probably were. It is quite possible that an uncomplicated pelvic cyst may be asymptomatic, being found only incidentally. Indeed it is difficult to see why in such a case

symptoms should arise. Because of the stasis, however, the opportunity for complications as calculi and infection is excellent. A cyst of this type can be usually readily diagnosed from the pyelogram where it is seen as an oval area extrinsic to the pelvis proper, filling up with the opaque medium. Where the cyst is large, as in Case 4 extrinsic pressure on the pelvis is evident. Where calculi are present and the lesion is on the right side, differentiation must be made from gall stones, as in the one case cited. The lateral view will then be of value in the differentiation. It is also desirable to have a lateral view after the injection of opaque medium in order to identify the location of the calcareous shadows with that of the cyst as, of course, the calculi may be present in the renal pelvis. Other points in differentiation were discussed under Case 2. The cyst may, in some cases, have to be differentiated from an inflammatory constriction of an infundibulum with dilatation of the calyx proximal thereto as is noted in slide 13. This can usually be done because, in this case, the area is present at the site of the calyx and not extrinsic thereto. The rotundity of a cyst is, moreover, probably more pronounced than in the case of a dilated calyx.

In other cases, although rarely, it may be necessary to differentiate the cyst from tuberculosis where ballooning out of the calyces may occur. In this case there is usually multiple involvement and other evidences of renal tuberculosis may be present. This is illustrated in slide 14.

DISCUSSION

Dr. M. J. Hubcny, Mr. Chairman, Ladies and Gentlemen: Dr. Bennett has covered the paper so completely that I really have nothing to say except reiteration.

The most interesting part of this presentation is the presence of stones in each of the cases and their location would make one suspicious of the possibility of cysts. However, by the urographic methods it is possible to definitely establish the existence of these cysts because of their communication with the pelvis. It was formerly thought that cysts, at no time, communicated in this manner.

It is hardly necessary to discuss the possible methods of differentiation before this group as you are all aware of the possibilities of simulants and the methods needed.

Dr. Bennett (Closing the discussion);

The question has been asked whether the cysts may be due to supernumerary calyces which are dilated. In case 1, if the cysts were due to dilatation

of a calyx, I do not believe the narrow communicating tract would be present unless it is assumed that this is due to congenital narrowing here, or to an inflammatory constriction. The latter was not suggested by the pathologic study. Moreover, no evidence of a supernumerary calyx is noted in the corresponding position in the other renal pelvis. The possibility, however, of this interpretation is not excluded, — especially in Case 2.

In Case 3 I mentioned that there may be a congenital dilatation of the calyx, but here it would be a matter of terminology as to whether to designate it such, or as a cyst.

In Case 4 I believe the huge size of the cystic area makes it improbable that it is due to a dilated calyx. Here too, a narrow tract connects this with the renal pelvis.

CEREBRAL INSULT FOLLOWING HYPOGLYCEMIC SHOCK THERAPY, WITH RECOVERY A CASE REPORT

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The literature of insulin shock therapy deals extensively with protracted comas and their complications. Baker and Lufkin¹, Finiefs², Wortis and Lambert³ and a number of other workers have been among those who have reported on protracted comas and their complications. In the following case there occurred a train of sequelae apparently with little direct relationship to the length of coma or the dosage of insulin. The patient showed evidence of cerebral involvement after a number of hours of full wakefulness.

CASE HISTORY

G. G., a white, poorly nourished, poorly developed young female, 23 years of age. Physical examination revealed nothing unusual, except for a blood pressure of 140/90 and moderate tachycardia. Blood count: white cells, 7,400, R.B.C. 4,080,000; hb. 62%, color index .77.

Her mental state was marked by extreme negativism. Occasionally she would run around the room, was resistive and combative, and, at times, she would assume statuesque postures; she was always mutistic. The classification given was dementia praecox, catatonic type.

She was placed on insulin therapy 8/21/39. She received six insulin hypoglycemic treatments, the last one, 8/30/39, of 50 units. Previous dosages never exceeded 50 units.

Late on the afternoon of 8/30/39, following regular

insulin hypoglycemia from which she had fully recovered following the usual administration of sugar, patient became acutely disturbed, combative, resistive and noisy. She was given routine sedative hydrotherapy. Later, in the evening of the same day, the patient suffered a generalized convulsion. She was given glucose on the supposition of a protracted hypoglycemic state. About 11:30 the following morning (8/31/39) patient had another generalized convulsion of the grand mal type. Even in the quiescent state it was observed that there were constant myoclonic contractions confined to the left side of the body, conspicuous in the left leg, arm and shoulder. Rigidity of the left arm was also noted. On the afternoon of the thirty-first she became stuporous and had another generalized convulsion with blood-tinged sputum from a lacerated tongue. The convulsions began with contractions in the left leg, then included the left arm, and then became generalized as more or less typical epileptiform seizures of the grand mal type.

Physical examination at this time showed no evidence of pulmonary edema or other involvement. Deep reflexes were increased on the left side. Myoclonic twitching was pronounced in left arm and leg. There was a suggestion of a Babinski on the left side, but no ankle or patellar clonus.

She had five more grand mal convulsions in the evening. At this time the reflexes were as follows:

Reflexes	Right	Left
Biceps	+	+
Triceps	+	+
Patellar	+	+++
Achilles	+	++++
Babinski	↓	↑

Blood chemistry examination performed at this time showed 129 mg. of sugar. Spinal puncture showed clear fluid, under considerable pressure, containing five cells per cubic mm.; negative Ross Jones and Pandey, with a gold curve of 012223322.

The patient was given intravenous sodium amytal, hypodermoclysis of 1,000 cc. of 5 per cent. glucose in saline, which was repeated later; retention enema of magnesium sulphate.

The following morning patient's condition was greatly improved. She was fully awake and had no more myoclonic twitching or convulsions. There was now no motor paralysis or rigidity, but only a slight weakness of the right upper extremity. At this time the reflexes were normal as follows:

Reflexes	Right	Left
Biceps	+	+
Triceps	+	+
Patellar	+	+
Achilles	+	+
Babinski	↓	↓

No further convulsions or any other neurological

symptoms recurred from then on. Mentally, there was no improvement. To date, no residual neurological symptoms have been noted in this case. It may be pertinent to add here that after a lapse of six weeks the patient was given metrazol shock therapy and to date has had 15 grand mal seizures in the course of this treatment with no untoward effects and some mental improvement.

COMMENT

We have here a patient, who, following the sixth hypoglycemic treatment, lapsed into a comatose condition with repeated convulsions of the grand mal type, apparently the result of irritation of, and possibly petechial hemorrhages into, the motor cortex. Although protracted comas and delays in insulin shock therapy are fairly common, this patient presented an unusual feature in the generalized convulsions and signs of focal irritation. This case also draws attention to the fact that in these instances of borderline reversibility, as shown notably by Wortis and Lambert³, fatalities can be avoided by prompt and adequate treatment.

REFERENCES

1. Baker, A. B., and Lufkin, N. H.: Cerebral Lesions in Hypoglycemia, *Archives of Pathology*, 23: 190, 1937.
2. Finiels, L. A.: Dangers and Emergencies of Insulin Therapy of the Psychoses, *J. Ment. Sci.* 84: 678, 1938.
3. J. Wortis and R. H. Lambert: Irreversible or Hyperglycemic Insulin Coma, *Am. J. Psy.* 96: 335, 1939.
4. Lester, D.: A Study of Prolonged Coma Following Insulin Shock, *Am. J. Psychiat.* 95: 1083, 1939.
5. Freed, H., and Wofford, C. W.: Subarachnoid Hemorrhage During Shock Therapy for Schizophrenia, *Arch. Neurol. and Psychiat.* 39: 813, 1939.
6. Easton, N. L.: A Case of Protracted Hypoglycemia, *Am. J. Psychiat.* 94: 853, 1938.
7. Baker, A. B.: Cerebral Damage in Hypoglycemia, *Am. J. Psychiat.* 96: 109, 1939.
8. Fatality Following Insulin Therapy, *Psychiat. Quart.* 13: 361, 1939.

EXTRARENAL AZOTEMIA

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The complete medical study of a patient usually includes certain essential laboratory procedures amongst which are nonprotein nitrogen and urea determinations of the blood. Not uncommonly such reports indicate increased nitrogenous retention. This may lead the physician to believe that kidney disease is present, but on further clinical and laboratory study of the case, he finds no evidence of kidney damage. Such findings of increased nitrogenous retention in

patients showing no kidney pathology, have been termed extrarenal azotemia.

Many phases of this subject have received considerable mention in recent medical literature, the best and most comprehensive discussions being by Jeghers and Bakst¹ of Boston, Gomori and Podhradzky,² and McDonald³ of the Cleveland Clinic.

The nonprotein nitrogen in the blood at any one time must depend on two factors: the rate of production and the rate of excretion. In a discussion of extrarenal azotemia then, one would have to discuss those factors increasing the production of nitrogenous waste, and those extrarenal factors diminishing its urinary excretion. As the nonprotein nitrogen in the blood is intimately related to the protein catabolism, it seems advisable to review first the essentials of protein metabolism.

The protein in our food is not acted upon until it reaches the stomach, where the pepsin and hydrochloric acid break it down to proteans, meta proteins and peptones. When these enter the duodenum and small intestines, digestion continues with the aid of trypsin and erepsin until these proteins are broken down to their simplest forms of polypeptides and amino acids. These acids are then absorbed into the portal system and carried to the liver. Here they may be deaminized and the nitrogen excreted as urea. The non nitrogenous residue may be converted to carbohydrates or fats or burned directly to carbon dioxide and water for energy purposes. If the amino acids pass through the liver unchanged they may be temporarily stored, then used to build tissue proteins. After remaining as constituents of protoplasm for some time, the tissues are broken down and the amino acids are again liberated. This process of anabolism and catabolism of protein goes on continuously, but is influenced considerably by the age of the individual, his activity, health and diet. Carbohydrates and fats are known as spacers of protein. When there are sufficient carbohydrates and fats in the diet, the adult individual will call on these for the greatest part of his energy requirements and will use the proteins only to make up the nitrogen or protein equilibrium. In that case the least amount required would be about 50 Gm. of protein, the amount catabolized per day.

The products of protein metabolism are found

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in the blood and lymph, chiefly in the form of urea, amino acids, uric acid, creatinine and the so-called undetermined nitrogen group. The nitrogen values of all these substances when added together give us the total nonprotein nitrogen of the blood. This usually ranges between 28 and 42 mg. per 100 cc. with an average of 32 mg. The urea nitrogen varies between 9 and 16 mg. per 100 cc. with an average of 12 mg. The amino acid nitrogen varies between 6 and 8 mg. with an average of 6 mg. The uric acid and creatinine make up a very small percentage. The undetermined nitrogen averages about 14 mg. or about one third of the total nonprotein nitrogen of the blood.

An increase in any of the above substances results in an increase in the total nonprotein nitrogen. But the fluctuations which have been observed in these constituents other than urea have been very small. This is true under physiological as well as pathological conditions. Therefore, it can be said that the total nonprotein nitrogen usually depends upon and runs parallel with the urea content. Since the urea concentration of the blood at any one time is influenced a great deal by the rate of protein destruction, it naturally follows that the rate of protein catabolism is one of the fundamental factors in determining the nonprotein nitrogen level of the blood. Clinically this factor seldom acts independently. In cases of increased nitrogenous retention one or more other factors usually play important roles. Some of these may be extrarenal in character.

Drop in blood pressure is one such example. Glomerular filtration depends upon several factors, one being the hydrostatic pressure. This is represented by the difference between the capillary pressure and the osmotic pressure of the plasma proteins. Ordinarily, the osmotic pressure of the colloids in the blood plasma is 30 mg. of mercury. It has been observed that if the peripheral blood pressure falls below 70 mg. of mercury, anuria will result.

Lowering of the sodium and chloride content of the blood may lessen the urinary output.⁴ Various authors differ as to the exact mechanism involved, but seem to agree that certain concentrations of these substances are essential for the maintenance of the normal blood plasma volume which is necessary for excretory purposes.

Dehydration may also affect renal function.

Several reasons are given for this. First, dehydration limits the available fluid for excretory purposes. Second, dehydration has been shown to increase protein catabolism. Third, it diminishes the blood flow through the kidneys thus lowering the capillary blood pressure and finally, dehydration tends to increase the colloidal osmotic pressure of the blood and thereby lessen the hydrostatic pressure in the glomeruli.

Marked liver damage may cause an increase in nonprotein nitrogen. This increase is due to the accumulation and retention of amino acids which cannot be deaminized and converted into urea by the damaged liver.

Finally, various types of colics may cause a so-called reflex anuria and bring about an increased nitrogenous retention.

Clinically extrarenal azotemia has been observed under physiological as well as pathological conditions.

PHYSIOLOGICAL CONDITIONS:

A diet rich in protein results usually in a higher nonprotein nitrogen level. It reaches its maximum three to four hours after a meal. This is best explained by the excess of amino acids in the blood due to the increased protein digestion and the excess of urea due to the increased protein catabolism. Physical exercise, by increasing protein catabolism, may increase the nitrogenous waste in the blood, especially when the food and water intake is restricted. Finally, Okey and Erickson⁵ have noticed an increase in the nitrogen level of the blood in women just before menstruation.

PATHOLOGICAL CONDITIONS:

Lemnox,⁶ who has studied the relationship between starvation and nitrogenous retention, reports a definite increase which disappears on taking food. As one would expect in the case of starvation, the person after using up the carbohydrates and fat reserve, calls upon his own body proteins and thereby brings about an increased protein catabolism. If this starvation is accompanied by dehydration, the nitrogenous retention will be increased still further.

Gastro-intestinal obstructions will bring about an azotemia. The mechanism is similar to that of starvation. It is not due as was previously thought, to absorption of toxic products of protein digestion from the obstructed loops of bowel,

since nitrogenous retention will also occur when the obstruction is at the pylorus⁷ or higher.

Endocrine disturbances may tend to elevate the nonprotein nitrogen level. Hyperthyroidism⁸ with its increased metabolism may be a cause, unless this increased demand for fuel is met by a high carbohydrate high caloric diet. In certain tumors of the posterior pituitary, the antidiuretic factor may be increased sufficiently to inhibit the action of the kidneys. In Addison's disease the renal function is impaired. Here we have a number of factors at work. There is a disturbance of sodium metabolism, there may be vomiting, diarrhea with dehydration, blood concentration and marked fall in blood pressure, all tending to diminish urinary excretion. The convulsions following parathyroidectomy will cause a marked increase in muscular activity and thereby bring about an increased protein catabolism. According to Haden and Orr⁹ such rise in nonprotein nitrogen level of the blood is almost entirely confined to the undetermined nitrogen fraction.

In diabetic acidosis where there is a faulty and wasteful burning of protein, nitrogenous retention may result.

Transitory increases in nonprotein nitrogen have been noted following severe hemorrhages.¹⁰ Several reasons have been given to account for this. The dehydration following the hemorrhage may be one factor. It has also been shown that where plasma proteins are markedly decreased, the endogenous protein catabolism is increased. Also it has been shown that the nonprotein nitrogen content of the tissue fluids is somewhat higher than that in the blood. Therefore when the blood volume is formed from the tissue fluids, the nonprotein nitrogen of the blood may be increased.

Diseases accompanied by fever result in increased protein catabolism.¹¹ This is due not only to increased energy requirement, but also to an active destruction of tissue. The infection or intoxication may bring about an actual autolysis of tissue.¹² Therefore fevers may bring about an elevation of the nonprotein nitrogen of the blood.

SUMMARY

1. Extrarenal azotemia is a term used to describe an elevation of the nonprotein nitrogen level in the blood in patients showing no kidney disease.

2. The basic mechanisms depend upon factors which increase protein catabolism or diminish urinary excretion or both.

3. Extrarenal azotemia may occur under physiological as well as pathological conditions.

REFERENCES

1. Jephers, H., and Bakst, H. J.: Syndrome of Extrarenal Azotemia, *Ann. Int. Med.* 11: 1861-1899, 1938.
2. Gomori, P., and Podhradzky, L.: Mechanism of Extrarenal Azotemia, *Acta. Med. Scandinav.* 92: 347-356, 1937.
3. McDonald, R. H.: Clinical Significance of an Increased Nonprotein Nitrogen Content of the Blood, *Clev. Clin. Quar.* 6: 283-293, 1939.
4. Teitelbaum, M.: Relationship between Chlorides and Nitrogenous Waste Products, *J. Lab. and Clinic. Med.* 23: 689-699, 1938.
5. Okey, R., and Erickson, S. E.: *J. Biol. Chem.* 68:687, 1926.
6. Lemnox, W. G.: *Arch. Int. Med.* 38: 553, 1926.
7. Pontrandolfi, P.: Hyperazotemia in Pyloric Stenosis, *Arch. Ital. d. Mal. d. App. Diges.* 8: 56-66, 1939.
8. Busacchi, V.: Azotemia in Hyperthyroidism, *Bull. d. Sc. Med. Bologna*, 109: (May-June), 1937.
9. Haden, R. L., and Orr, T. G.: Relationship of Nonprotein Nitrogen of the Blood to Parathyroid Tetany, *Am. J. M. Sc.* 167: 108-114, 1924.
10. Kobro, M. S.: Azotemia in Hematemesis and Melena, *Norsk Mag. f. Laegevidensk* 99: 457-464, 1938.
11. Glesinger-Reischer, G., and Glesinger, B.: *Wien, Klin. Wchnschr.* 36: 181, 1923.
12. McIntosh J. F., and Riemann, H. A.: *J. Clin. Invest.* 3: 123, 1923.

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SULFANILAMIDE AND CONVALESCENT SERUM IN SCARLET FEVER

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Chemotherapy with sulfanilamide or its derivatives occupies a prominent position in laboratory and clinical investigation. The established benefits of this drug in other streptococcal infections would lead to the belief that sulfanilamide would be of value in scarlet fever. Many clinical studies, attempting to evaluate chemotherapy in this disease, have been reported but resulting opinions have been controversial. It was for this reason that we made an analysis of our material, feeling that additional information would be timely.

Plan of Investigation. Physicians who use convalescent scarlet fever serum in their private cases of scarlet fever send reports to the Serum Center. These reports contain all pertinent information on the patient, the illness, the therapy,

From the Samuel Deutsch Convalescent Serum Center, Michael Reese Hospital, Chicago, Illinois.

and the results. With the advent of sulfanilamide and its reported success in the treatment of streptococcal infections, many physicians informed us that they were supplementing convalescent serum therapy with chemotherapy. From January 1938 to May 1939, inclusive, specific information was submitted by physicians on the use of sulfanilamide or its derivatives; the dose, the time of starting and the period of administration of the drug. We selected for analysis all reports of patients treated with adequate doses of convalescent serum. Cases with complications at the time treatment was instituted were excluded. We also omitted from this study those reports of patients treated early in the disease with sulfanilamide and subsequently with convalescent serum because of failure to respond to chemotherapy because we had no comparable controls. The remaining reports fell into two groups. The first and larger group of cases was treated basically and fundamentally with convalescent serum and will be called the "serotherapy" group. A small number (about 8%) of these cases were given supplementary sulfanilamide later in the disease because of unsatisfactory progress or complications. These were included in the serotherapy group, regardless of the dose of sulfanilamide, because sulfanilamide was only a delayed and subsidiary therapy. The second group of patients were started on sulfanilamide and given convalescent serum simultaneously or within the same 24 hour period, the aim of the physician being to utilize the beneficial effects of both agents. This group is designated as the "serum-sulfanilamide" or "combined therapy" group, and here only cases receiving a daily dose of sulfanilamide of not less than $\frac{3}{8}$ gr. per pound body weight were included. The results in these two groups were analyzed, tabulated and compared. From our past experience with the use of convalescent serum in scarlet fever¹ we expected good effects on the acute symptoms and a relatively low mortality and low incidence of complications, but we felt that these effects might be enhanced by the addition of sulfanilamide because the drug

has a mode of action² different from convalescent serum.

The difficulties confronting a study of this kind and the hazards in drawing conclusions must be fully appreciated. Scarlet fever is a highly variable disease, known to differ widely from place to place, year to year, and season to season. It is also well recognized that the disease is more severe and complications more frequent in the younger age groups. Furthermore, there is no standard criterion for the designation and interpretation of complications. This is well illustrated in Tables 2A and 2B where the recording of complications in the different reports is so lacking in uniformity that it is impossible to compare one author's series directly with another's. Furthermore, large numbers of cases are necessary for conclusive results.³

The two groups analyzed in this communication are comparable. The patients in both groups came from the same region, were ill at the same period of time, and suffered a comparable degree of severity of illness. There were slight differences in average time of institution of treatment and in the age groups in the two series, both in favor of the serum-sulfanilamide group (see Table I). The reports submitted to us showed that the patients in both groups were attended essentially by the same physicians so that, on the whole, both groups were subjected to comparable interpretation and reports of complications. It would have been much more satisfactory if both groups had had an equally large number of cases, but we were unable to control this circumstance.

RESULTS

Prophylaxis: Six cases came to our attention, in which sulfanilamide was used for prophylaxis. These cases are abstracted briefly because there are so few references on this subject.

Case 1: An adult male (physician) in contact with several cases of scarlet fever received sulfanilamide, 20 grains daily for two days and then 30 grains daily. On the sixth day, the patient developed scarlet fever of moderate severity.

1. Hoyne, A. L., Levinson, S. O., and Thalhimer, W.: Convalescent Scarlet Fever Serum: Its Prophylactic and Therapeutic Value: A Review of 2875 cases, J.A.M.A. 105: 783 (September 7) 1935. Levinson, S. O., Penruddocke, E., and Wolf, A.M.: Human Convalescent Serum and its Application to Acute Infectious Diseases, Ill. Med. J. 72: 514 (December) 1937.

2. Lockwood, J. S., Coburn, A. F., and Stokinger, H. E.: Studies on the Mechanism of the Action of Sulfanilamide. I. The Bearing of the Character of the Lesion on the Effectiveness of the Drug, J.A.M.A. 111: 2259 (December 17) 1938.

3. (a) Wesselhoeft, C., and Smith, E. C.: The Use of Sulfanilamide in Scarlet Fever, New England J. Med. 219: 947 (December 15) 1938. (b) Schwentker, F. F., and Waghelstein, J.: A Note on the Use of Sulfanilamide in Scarlet Fever, Baltimore Health News 15: 41 (June) 1938.

Case 2: A 7 year old boy exposed to scarlet fever received sulfanilamide, 20 grains daily. On the fifth day the patient developed scarlet fever which appeared to be mild, but subsequently a mild nephritis developed.

Case 3: An adult female exposed to scarlet fever received sulfanilamide, 90 grains daily. The patient developed scarlet fever of moderate severity (time not stated).

Case 4: A 5½ year old girl developed a submental abscess with cervical adenitis for which she received 15 grains of sulfanilamide daily. On the 9th day, the patient developed scarlet fever of moderate severity.

Case 5: An adult female developed streptococcic pneumonia for which she was given sulfanilamide, 20 grains daily. On the 14th day, the patient developed scarlet fever of moderate severity.

Case 6: A 13 year old boy developed an infection of the toe with suppurative lymphadenitis (subsequently found to be staphylococcic in origin) and was given sulfanilamide, 60 grains daily. On the 2nd day, the patient developed scarlet fever of moderate severity.

We do not feel that any conclusion can be drawn from this scanty experience. It is even possible that some of these patients had a rash and fever from the sulfanilamide, although there were characteristic signs and symptoms of scarlet fever. The literature⁴ on the prophylactic use of sulfanilamide for scarlet fever is sparse

and we could find no reports of controlled studies.

Since the prophylactic value of sulfanilamide for scarlet fever has not yet been established, its general use to protect against the disease is open to question. Drug fever and rash are sufficiently common to cause confusion. Instances of scarlatiniform sulfanilamide eruption leading to a false diagnosis of scarlet fever and unnecessary quarantine have been cited.⁵

Effect on Acute Symptoms. Our study revealed that the patients in the serotherapy and serum-sulfanilamide groups had an identical course of illness during the acute stage. Over 90% of patients in both groups experienced a rapid amelioration of the acute symptoms. Since the relief of symptoms and decrease in duration

4. (a) Sako, W., Dwan, P. F., and Platou, E. S.: Sulfanilamide and Serum in the Treatment and Prophylaxis of Scarlet Fever, J.A.M.A. 111: 995 (September 10) 1938. (b) Wolff, J.; Prontosil in Scarlatina, Arch. f. Kinderh. 116: 131 1939. (c) Boyksen, O.: Observations in the Scarlet Fever Epidemic of Pinneberg of 1937, Zeitschr. f. Hyg. u. Infektionskr. 120: 466 (June) 1938. (d) Svenne, H.: A Note on the Abatement of an Epidemic of Scarlatina with Prontosil, Ugesk. f. laeger 99: 1004 (September 23) 1937. (e) Farioli, A.: Treatment of Scarlet Fever with Azo-dyes, Med. Inf. (Roma) 8: 291 (September) 1937; Abstracted in Am. J. Dis. Ch. 56: 176 (July) 1938. (f) Stoesser, A. V., and Johnson, E. V.: Prevention and Treatment of Contagious Diseases, Journal-Lancet 60: 1 (January) 1940.
5. Garvin, C. F.: Complications Following the Administration of Sulfanilamide, J.A.M.A. 113: 288 (July 22) 1939.

TABLE I. COMPLICATIONS IN SCARLET FEVER

Age	SERTHERAPY GROUP Convalescent Serum						SERUM-SULFANILAMIDE GROUP Sulfanilamide and Convalescent Serum					
	0-2	3-5	6-10	11-15	16 & Over	Total # %	0-2	3-5	6-10	11-15	16 & Over	Total # %
# Cases	114 (9%)	387 (30%)	620 (48%)	86 (7%)	72 (6%)	1279 100	12 (6%)	54 (26%)	109 (54%)	13 (6%)	17 (8%)	205 100
# Cases with No Complications	94	311	516	74	62	1057 83	10	41	94	12	17	174 85
Average Day Disease Serum Given	3.1	3.0	3.1	3.1	3.4	3.1	2.8	3.0	2.8	2.5	3.0	2.8
Average Day Disease Sulfanilamide Started							2.4	2.8	2.4	2.0	2.7	2.5
Average Dose Sulfanilamide*							0.88	0.70	0.55	0.53	0.39	0.55
Average # Days Sulfanilamide Given							6.5	6.9	5.1	5.5	7.1	5.9
COMPLICATIONS												
Adenitis	10	37	48	3	1	99 7.7	1	6	12	1		20 10.0
Otitis Media	8	32	38	4	1	83 6.5	2	8	2			12 6.0
Mastoiditis		2	5			7 0.6	1	1	1			3 1.5
Nephritis	2	4	12		2	20 1.6			3			3 1.5
Sinusitis	1	3	7	3		14 1.1			1			1 0.5
Endocarditis			3	1		4 0.3		1				1 0.5
Other	1	8	9	2	6	26 2.0		1	3			4 2.0
Death	2	2	1			5 0.4					1	1 0.5
Total	24	88	123	13	10	258 20	4	17	22	1	1	45 22

* Calculated as grains/day/pound body weight from age-weight tables.⁸

of fever was not more prompt in the combined therapy group than in the serotherapy group, we feel that sulfanilamide did not contribute materially to the effect of serum upon the acute manifestations of the disease.

The literature^{6,7}, with few exceptions indicates that sulfanilamide or its derivatives has no effect upon the fever, the rash, the angina, or the toxicity of early acute scarlet fever. Even in those publications where the incidence of complications seemed markedly reduced, the authors state that the drug was without evident effect on the acute symptoms. The adverse effects of sulfanilamide in some patients may even add to the patient's discomfort.^{7g}

Prophylaxis of Complications. Since complications constitute a major problem in scarlet fever, the prevention of complications by chemotherapy merits the greatest interest and consideration. The results of our analysis are presented in Table I.

Examination of Table I shows the data for the two groups: serotherapy and serum-sulfanilamide, previously described. The tabulation by age shows two important points: the greater incidence of complications in the younger age sections of both groups and the comparability of the two groups as regards age incidence; 87.5% of cases in the serotherapy group are under 11 years of age compared with 85% in the serum sulfanilamide group. The average day of disease when convalescent serum was administered is 2.8 days in the serum-sulfanilamide group and 3.1 days in the serotherapy group. The

table also shows that sulfanilamide was usually started on the second or third day of the disease and continued for an average of 5.9 days. Thus it was usually given all through the acute stage and then continued through several days of normal temperature. Furthermore, the average dose of sulfanilamide is 0.55 grains/lb/day and is larger in the younger age groups where complications are most likely to appear. One hundred and sixty-six of the total of 205 cases in the serum-sulfanilamide group received at least 0.5 grains/lb/day of sulfanilamide. The 39 remaining cases were given 0.375 grains/lb/day and it is interesting that there were only 5 complications in these cases receiving the smaller dose of drug: 3 developed adenitis, 1 otitis media, and 1 a heart murmur. Furthermore, the complication rate (13%) in these 39 cases is less than the general average (22%) of the entire serum-sulfanilamide group. Inclusion of the 39 cases receiving the least sulfanilamide actually lowers the total complication rate in the combined therapy group.

The difference in total numbers of cases in the two groups being compared, makes it necessary to resort to percentages to study the effect of the sulfanilamide. Eighty-three per cent. of the serotherapy group were free from complications during the illness as against 85% of the serum-sulfanilamide group. The complication rates in the two groups are strikingly parallel: thus, for adenitis the figures are respectively 7.7% against 10%; for otitis media, 6.5% and 6.0%; for mastoiditis, 0.6% and 1.5%; for nephritis, 1.6% and 1.5%; for sinusitis, 1.1% and 0.5%; for endocarditis, 0.3% and 0.5%. The total complication rate reflects the same similarity: 20% in the serotherapy group and 22% in the serum-sulfanilamide group. We feel that under the conditions of this study, sulfanilamide-serum treatment was not superior to convalescent serum therapy alone in preventing complications in scarlet fever. The relative incidence of complications in both groups is somewhat lower than was reported previously on a series of cases studied several years ago.¹ This may be accounted for by the fact that larger doses of convalescent serum and earlier administration by the intravenous route is now practiced although the question may be raised that the disease in this region may be somewhat milder than it has been in the past.

6. (a) Wesselhoeft and Smith 3a. (b) Schwenker and Waghelstein 3b. (c) Wolff 4b. (d) Hogarth, J. C.: Parabenylaminobenzene-sulphonamide in the Treatment of Scarlet Fever, Brit. Med. J. 2: 1160 (December 11) 1937. (e) Mitman, M.: Sulphanilamide and its Congeners: Treatment of Scarlet Fever and Other Infections, Brit. Med. J. 2: 928 (November 6) 1937. (f) Anderson, T.: Prontosil and Sulfanilamide in the Treatment of Erysipelas with an Addendum Regarding its Value in Scarlet Fever and Cerebro-spinal Meningitis, Glasgow Med. J. 129: 81 (addendum) (February) 1938.

7. (a) Sako, Dwan, and Platou 4a. (b) Strom, J.: Prontosil Red in the Treatment of Scarlatina, Acta Paediatr. 23: 333 1939. (c) Benn, E. C.: Sulfanilamide in the Treatment of Scarlet Fever, Brit. Med. J. 2: 644 (September 23) 1939. (d) Peters, B. A., and Havard, R. V.: Chemotherapy of Streptococcal Infections with p-benzylamino-benzene-sulphonamide, Lancet 232 (volume 1 of 1937) 1273 (May 29) 1937. (e) Levasheva, A. D.: Application of Streptocide in Scarlet Fever, Klin. Med. 16: 931 1938. (f) Filicheva, Z. V.: Preliminary Observations on the Application of Streptocide in Scarlet Fever, Klin. Med. 16: 928 1938. (g) Hamilton, P. M., and Togasaki, Y.: Prophylaxis of Complications of Scarlet Fever, J. Pediatr. 4: 655 (May) 1939.

The literature on the use of sulfanilamide in scarlet fever is quite extensive. We did not review certain reports because reference to them in other publications indicated that they consisted of a few case reports or did not include any controls and we felt it would be impossible to evaluate the results. There were other publications⁹ which were difficult to evaluate because of incomplete controlled data. We selected publications¹⁰ dealing with sufficient numbers of cases and sufficiently adequate controls which we have summarized and tabulated in Tables 2A and 2B. We noted the country where each study was carried out (since many believe this a matter of importance in appraising results) and the essential data with respect to sulfanilamide. Different forms of sulfanilamide were used by different investigators. The criteria for establishing dosage varied widely in the different publications. In order to form some uniform method for comparison, we attempted to estimate the dosage in terms of grains/lb. body weight/day, using age-weight tables.⁸ The drug was employed early and continued for varying periods of time. Under "number of cases" we also have indicated use of antitoxin or human convalescent serum as the case might be. This is a matter of considerable importance, since optional use of horse serum may introduce many variables. Horse serum arthritis and albuminuria are not

uncommon, and may be incorrectly interpreted as complications of scarlet fever. The table shows the percent of cervical adenitis, otitis media, and total complications. Finally, the authors' own conclusions are presented.

Table 2A discloses a marked variation between the different reports. It is obvious that one study cannot be compared with another but that test cases treated with sulfanilamide must be compared with controls.

Sako, Dwan and Platou find a striking reduction of complications in the sulfanilamide treated cases. Wesselhoef and Smith, on the

8. Davison, W. C.: The Compleat Pediatrician, Second Edition p. 237, Duke University Press 1938.
9. Gavrilu, I.: Treatment of Erysipelas and of Scarlatina with Proseptin, Cluj. med. 19: 502 (August) 1938. Patterson, D. C.: Experience with Prontosil and Prontylin, J. Connecticut M. Soc. 1: 358 (August) 1937. Maraun, L.: Prontosil Management of Erysipelas and of Pyuria, Kinderartzl. Praxis 7: 445 (October) 1936. Shuchevskiy, I. S.: Healing of Scarlatina by Streptocide. Sovet, vrach. zhur. 42: 837 (December 15) 1938. Kouperman, S.: Treatment of Scarlatina by Streptocide, Vrach, delo 20: 595 1937. Chowanec, W.: Treatment of Scarlatina by Azofag C., Medycyna No. 4. p. 138 (February 21) 1938. Thenebe, C. L., Hirshberg, M. S., and Bobrow, A.: 350 Cases of Scarlet Fever Treated with Sulfanilamide and Neoprontosil, J. Connecticut M. Soc. 3: 351 (July) 1939. Gerbst, V. V.: Experience with Streptocide Therapy in Scarlatina, Klin. Med. 17: 85 1939.
10. (a) Sako, Dwan, and Platou 4a. (b) Wesselhoef and Smith 3a. (c) Peters and Havard 7d. (d) Schwentker and Waghelstein 3b. (e) Hamilton and Togsaki 7g. (f) Benn 7c. (g) Hogarth 6d. (h) Pfaffenbichler, R.: Effects of Prontosil on the Second Stage of Scarlatina, Wein. Klin. Wchnsch. 51: 1193 (November 4) 1938. (i) Wolff 4b. (j) Strom 7b. (k) Levasheva 7e. (l) Filicheva 7f.

TABLE 2A
EFFECT OF CHEMOTHERAPY UPON THE INCIDENCE OF
COMPLICATIONS IN SCARLET FEVER
LARGER DOSE — LIMITED PERIOD OF ADMINISTRATION

Author	Therapy Data				No. of Cases	% No. Compl.	% Complications				Author's Conclusions
	Drug	Dose*	Average Days Started	Given			Aden-itis	Otitis Media	Other	Total	
Sako, Dwan & Platou (4a) (U.S.A.)	Sulfanilamide	0.5	early	12	100	92	1	5	2	8	Great value
	—	—	—	—	100	59	9	15	22	46	
Wesselhoef & Smith (3a) (U.S.A.)	Prontylin	0.5	2.1	2.6	100	34	36	8	76	120	"Has not reduced"
	—	—	—	—	100	28	38	17	74	129	
Peters & Havard (7d) (England)	Proseptasine	0.5	2.3	5	150	66	20	7	29	56	"Some effect"
	—	—	—	—	150 a	49	18	7	36	61	
Schwentker & Waghelstein (3b) (U.S.A.)	Sulfanilamide	0.5	3.3	7.6	110	76	11	6	9	26	"Seems to indicate no therapeutic value"
	—	—	—	—	102	83	9	3	5	17	
	—	—	—	—	109 b	86	4	0	11	15	
Hamilton & Togsaki (7g) (U.S.A.)	Sulfanilamide	0.5	early	9	195	90	?	?	?	11?	"Offers protection . . . equal to convalescent serum"
	—	—	—	—	348 c	86	?	?	?	15.5?	
Benn (7c) (England)	Sulfanilamide	0.5	2.8	12	215 a	85	5	6	8	19	"Lowers the incidence"
	—	—	—	—	195 a	75	7	10	14	31	
Wolf & Levinson (U.S.A.)	Sulfanilamide	0.55	2.8	5.9	205 c	85	10	6	6.5	22	No effect
	—	—	—	—	1279 c	83	7.7	6.5	5.9	20	

* Estimated from authors' data and age-weight tables⁸ as grains/day/pound body weight
(a) Antiserum as necessary (b) Antiscrum in all cases (c) Convalescent serum to all cases

other hand, find no effect, dismissing the apparent reduction of otitis media from 17% to 8% as a matter of chance. Peters and Havard state that there is some benefit from sulfanilamide, although this does not seem to be borne out by the almost equal figures for adenitis and for otitis media in their control and test groups. The differences favoring the sulfanilamide treated cases are essentially in the incidence of endocarditis, albuminuria, and "rheumatism." In view of the fact that antiserum (horse serum) was administered to 56 of the control cases, serum arthritis and albuminuria may account^{3a} for the higher rate of these complications in the control group. Schwentker and Waghelstein's report is of especial interest because they studied two concurrent control series. In the first control series, there was a 3% incidence of otitis media in patients receiving only general care. In the second control group who were treated with antiserum, there was no otitis media. The sulfanilamide treated group of cases had a 6% incidence of otitis media and the highest rate of complications. There is no reason to believe that sulfanilamide is harmful and provokes complications as seems to be shown by these figures, which make clear the need of large groups of cases to warrant conclusive results. These authors stated that within the scope of their study sulfanilamide did not seem to have any

therapeutic value in scarlet fever. Hamilton and Togasaki in their brief article express the opinion that sulfanilamide therapy offers protection equal to convalescent serum therapy which is known to reduce complications. In Benn's report, restricted to patients up to age ten, he concludes that there are consistent benefits from the use of sulfanilamide. However, optional use of antiserum (horse serum) in both groups introduces a variable which makes evaluation of this study difficult.

The results analyzed in the foregoing reports differ so markedly, and the conclusions are at such variance that the value of sulfanilamide in preventing complications in scarlet fever remains controversial. It may be worth noting that the two really favorable reports (Sako, Dwan, & Platou,^{4c} Benn^{7c}) were from those studies in which sulfanilamide was given for the longest period, i.e., 12 days average.

Table 2B presents a series of reports of further interest because small amounts of sulfanilamide were employed, approximately one-half, or even less than one-half, of the customary American dosage. In Hogarth's excellently controlled study the results in the test cases fell approximately midway between his two control series, and he concluded that the drug has no significant effect upon the duration of the initial pyrexia, the initial toxemia, or the incidence of

TABLE 2B
EFFECT OF CHEMOTHERAPY UPON THE INCIDENCE OF
COMPLICATIONS IN SCARLET FEVER

SMALLER DOSE — LIMITED PERIOD OF ADMINISTRATION											Author's Conclusions
Author	Therapy Data				No. of Cases	% No. Compl.	% Complications				
	Drug	Dose*	Average Days				Aden-itis	Otitis Media	Other	Total	
			Started	Given							
Hogarth (6d) (England)	Proseptasine	0.3	2.4	14	114 b	78	7	4	17	28	"No significant effect"
	_____	_____	_____	_____	126 b	78	5	7	11	23	
	_____	_____	_____	_____	115	74	8	4	21	33	
Pfaffenbichler (10h) (Germany)	Prontosil	0.3	1	8	150	47	15	7	31	53	"Complications substantially reduced"
	_____	_____	_____	_____	150	27	20	11	42	73	
Wolff (4b) (Germany)	Prontosil	0.3	1	10	80	53	30	6	18	54	"No effect"
	Prontosil	0.3	10	10	120	60	33	3	8	44	
	_____	_____	_____	_____	77	55	32	4	14	50	
	_____	_____	_____	_____	45 b	62	25	4	11	40	
SMALLER DOSE — PROLONGED PERIOD OF ADMINISTRATION											Author's Conclusions
Author	Therapy Data				No. of Cases	% No. Compl.	% Complications				
	Drug	Dose*	Average Days				Aden-itis	Otitis Media	Other	Total	
			Started	Given							
Strom (7b) (Sweden)	Prontosil red	±0.15	early	42	122 a	62	15	12	23	50	"Reduction of one-third"
	_____	_____	_____	_____	122 a	43	21	15	39	75	
Levasheva (7e) (U.S.S.R.)	Streptocide	±0.2	2.5	27	275? a	?	3.3	5	1	?	"Results in lessening complications"
	_____	_____	_____	_____	275? a	?	17.5	7.5	6.5	?	
Filicheva (7f) (U.S.S.R.)	Streptocide	±0.2	2.5	22	104	80	5	16	12	33	"Possible value"
	_____	_____	_____	_____	146	68	7	18	17	42	

* Estimated as gr./lb./day from authors' data and age-weight tables⁸
(a) Antiserum as necessary (b) Antiserum to all cases

complications. Wolff^{4b} likewise finds no effect. Pfaffenbichler's^{10h} results, on the other hand, are favorable, and he feels that complications were substantially reduced. Paradoxically, however, he gave sulfanilamide for a shorter period of time (8 days average) than either Hogarth (14 days) or Wolff (10 days).

Finally, there are three reports in table 2B (Strom,^{7b} Levasheva,^{7c} Filicheva,^{7f}) in which very small doses of sulfanilamide were employed throughout the disease and all three authors claim beneficial results. In spite of the seemingly inadequate dosage of sulfanilamide employed, as judged by pharmacologic and other standards, this mode of therapy is perhaps worthy of further study, so that definite conclusions will be possible.

DISCUSSION

It is well known that the action of sulfanilamide ceases shortly after the discontinuance of the drug. Hoyne and Bailey¹¹ showed that administration of sulfanilamide does not free the patient's throat of hemolytic streptococci. It is likewise well known that complications of scarlet fever may appear at any time during the four weeks of quarantine and even later. These considerations may explain the failure in preventing complications when the drug is administered for only a limited time.

This conception is supported by the more favorable reports associated with the longer period of drug treatment in Table 2A. Sako, Dwan and Platou remark that their results were best in the cases receiving sulfanilamide throughout the disease. The reports of Strom, Levasheva, and Filicheva, in spite of apparently inadequate dosage fit well with this idea.

It is of interest that in three of the studies described above, the authors have attempted to avert complications by administering sulfanilamide later in the course of the disease, i.e., at the period when they felt complications are likely to appear. Hogarth^{6d} administered the drug early for seven days and on the sixteenth day of illness resumed treatment for an additional seven days. This method proved unsatisfactory although the small dose employed may have been a factor. Wolff^{4b} in one series of cases administered the drug early for ten days and in a later

series administered the drug from the eleventh through the twentieth day of illness. Here again the small dose employed may have been a factor in his concluding that unfortunately Prontosil does not lessen the incidence of complications in scarlatina; whether the drug be given early or in the second or third weeks, the development of complications is unaffected. Benn^{7c} feeling that the results in his controlled study were favorable, investigated the effects of routine administration of sulfanilamide in the fourth week of illness in addition to early administration. This method of treatment seemed to produce better results and he felt that it warranted further study. However, this second study was uncontrolled and was carried on in the warmer months when scarlet fever is usually milder.

Hoyne's vast experience in scarlet fever makes his opinion noteworthy. He states¹² that "shortly after Prontylin was first available Shaw and I treated a series of scarlet fever patients in the Cook County Hospital with Prontylin. The results were disappointing and unsatisfactory."

A recent report¹³ by Rhoads and Afremow is of particular interest, although it does not deal with scarlet fever. They employed sulfanilamide in the treatment of hemolytic streptococcal sore throat in nurses and observed no influence either on the acute symptoms or the incidence of complications. They state, "in the average uncomplicated case of tonsillitis or pharyngitis due to hemolytic streptococci the advisability of its routine use is questionable." Moncrieff¹⁴ does not recommend the routine use of sulfanilamide for acute streptococcal pharyngitis in children, although he advises the drug when complications appear.

The exact value of sulfanilamide in scarlet fever might be established by a large controlled

12. Hoyne, A. L.: Discussion of "Sulfanilamide in Scarlet Fever," Chicago Society of Internal Medicine, January 22, 1940.

13. Rhoads, P. S., and Afremow, M. L.: Sulfanilamide in Treatment of Sore Throat Due to Hemolytic Streptococci. *J.A.M.A.* 114: 942 (March 16) 1940.

Sore Throat, *J.A.M.A.* 114: 942 (March 16) 1940.

14. Moncrieff, A.: Advances in the Treatment of Disease of Children, *Practitioner* 143: 429 (October) 1939.

15. Long, P. H., and Bliss, E. A.: Toxic Manifestations of Sulfanilamide, *Ann. Surg.* 108: 808 (November) 1938.

16. French, J. O.: Effects of Sulfanilamide on the Blood in Scarlet Fever, *Lancet* 2: 127 (July 15) 1939. Brunn, E.: Action of Streptomycin on Leucocytes, *Ugesk. f. læge* 100: 1273 (November 10) 1938.

11. Hoyne, A. L., and Bailey, J. H.: The Use of Paraminobenzene-sulphonamide in the Treatment of Streptococcal Carriers, *Arch. Pediat.* 54: 731 (1937).

study in which adequate amounts of the drug are administered throughout the four weeks of illness* as was attempted by Strom with small doses. However, the unpleasant aspect of sulfanilamide reactions from large amounts of the drug over an extended time is a deterrent factor in a study of this kind. It is superfluous to enter into a detailed discussion on this phase of sulfanilamide. Long and Bliss¹⁵ incidence of 3% hemolytic anemia and Garvin's⁵ 4% rash and 10% drug fever are not uncommon experiences. Schwentker and Waghelstein^{3b} report a 10% incidence of drug rashes and both French and Bruun¹⁶ report evidence of some injury to the hematopoietic system in scarlet fever patients treated with sulfanilamide. In all the articles which we reviewed, the authors were acutely aware of the possibility of reactions to the drug and used it very cautiously.

The benefit of sulfanilamide either for the acute symptoms or for preventing complications of scarlet fever remains questionable. There is insufficient evidence at present to justify replacing a known therapeutic agent, such as human convalescent serum, with sulfanilamide in treating scarlet fever. Furthermore, since sulfanilamide treatment for a limited period during the acute stage of scarlet fever does not appear to enhance the effect of serum and since administration of the drug is attended by a possibility of unfavorable reactions, one would question the wisdom of routine use of sulfanilamide in scarlet fever even as adjunct therapy.

We wish to emphasize that this study and report does not deal with the active treatment of the complications of scarlet fever. This analysis has been limited to the problem of the value of sulfanilamide given in the early stage of scarlet fever for a limited time in combatting the initial acute symptoms, and preventing subsequent complications of the disease.

CONCLUSIONS

1. Sulfanilamide does not produce ameliora-

tion of the initial acute symptoms of scarlet fever.

2. The routine use of sulfanilamide during the first week of the disease, as an adjunct to convalescent serum therapy, did not further decrease the incidence of subsequent complications in our series.

3. A review of the literature indicates, in general, that the routine use of sulfanilamide for a limited time is of questionable value in preventing complications.

4. In view of the controversial opinion on its value, and the possibility of reactions attending its use, sulfanilamide in our opinion should not be used routinely in the treatment of early uncomplicated scarlet fever.

CARCINOMA OF THE BLADDER WITH ROENTGEN FILMS OF THE LESIONS BEFORE AND AFTER EXTENSIVE DEEP RADIATION THERAPY

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CHICAGO

Illinois State Medical Society, Section on Radiology, Peoria,
Illinois, May 21, 1940.

REPORT OF CASE

A white male, 60 years of age, entered the hospital March 2, 1938, with the following history: Burning on urination 4 months, frequency 20 times a day 2 months, nocturia 6 times 2 months, dribbling and pain on urination for 4 months. There was no hematuria.

HIS FAMILY HISTORY: His father died at age of 90. His mother at 63. Cause not known. One brother and three sisters living and well.

HIS PERSONAL HISTORY: included the usual diseases of childhood, moderate habits, no injuries. He was operated on in 1921 for a right inguinal hernia. From that date until the advent of this present complaint four months ago he has enjoyed good health.

Examination by systems revealed an enlarged, soft, smooth prostate. Chest and gastro-intestinal x-ray was negative.

EXCRETORY UROGRAPHY revealed an immediate dye response. K. U. B., was negative for stone. The pelves and calices were distended, the left more than the right. A gradual dilatation of the ureters was noted beginning in the upper third and extending downward until near the bladder and urethral orifice; they were bulbous in appearance. The bladder was the size of a bantam egg and presented a moth-eaten irregular contour.

ROENTGEN DIAGNOSIS: C. A., of the bladder with ureteral dilatation.

*Such a study appeared after this paper was written. J. O. French (The Sulfanilamide Treatment of Scarlet Fever, Jour. of Hyg. 39: 581, September 1939) observed the course of 170 cases receiving adequate doses of sulfanilamide thruout the four weeks of illness, as compared with 170 controls. Antitoxin was used in both groups. French found 16.9% cervical adenitis in the sulfanilamide group as against 23.4% in the controls, 3.6% otitis media as against 1.8%, and total complication rates of 61.0% and 61.7%. The author concludes that: "The results show that sulphanilamide had no significant effect upon the initial symptoms of scarlet fever, or upon the kind, incidence, or duration of later complications."

CYSTOGRAM of the bladder revealed practically identical excretory findings i.e., bladder irregularity unchanged, the bladder somewhat larger due to forceful distention. Cystoscopic findings revealed a lesion in the trigone, the entire bladder granular in character.

CYSTOSCOPIC FINDINGS: C. A.

URINALYSIS: Acid, shred of mucus 400 mg. albumin; no sugar; no acetone; no casts; 10-15 red cells per high power field; no pus.

BLOOD COUNT: 5,300,000; hemoglobin 85; white cells 17,800; neutrophils 86; small and large lymphocytes 11. Wassermann and Kahn negative.

FINAL DIAGNOSIS: C. A., of the bladder.

The patient was referred to Mayo Clinic. Cystoscopic examination and biopsy were made; the pathologic specimen was reported as "Squamous Epithelial C. A. grade 4."

The patient returned to Chicago for subsequent treatment and deep radiation therapy.

RADIATION FACTORS AS FOLLOWS: The patient weighed 145 lbs. Depth in centimeters 21. 200 K.V.P. Thoreaus filtration, M.A. 20. 900 "r" measured in air with backscatter as skin erythema dose, 15x50 cm. and 10x50 cm., fields with 5 ports of entry used, A. P., P. A., bladder, perineum, right and left lateral.

250 "r" were delivered daily except Sunday, each field receiving 750 "r." Total dosage 3750 "r" delivered in 15 days. There was a moderate erythema with resulting bronzing of the skin. There was no radiation sickness, no bladder or bowel irritation. Except for a feeling of tiredness following his daily dosage and for 3 weeks post radiation he had no complaint and carried on his business activities as usual.

TWO MONTHS' POST RADIATION found the burning on urination, frequency and nocturia completely absent.

FIVE MONTHS' POST RADIATION an *EXCRETORY UROGRAM* revealed an immediate dye response 5 minutes after injection of diodrast. The kidneys, ureters and bladder appear normal. Prostatic enlargement was demonstrable by the pressure defect it exerted on the distended bladder.

In May the patient returned to Mayo Clinic. The cystoscopic examination was reported as revealing a normal bladder.

In December of 1939 the patient again returned to the Clinic where cystoscopic and excretory urography was reported as revealing a normal G. U. tract.

May 17, 1940 *EXCRETORY UROGRAPHY* revealed an immediate dye concentration in both kidneys, ureters and bladder. The serial examination revealed a distended left ureter near the bladder ureteral orifice while the bladder fully distended revealed what appeared to be a wave-like conformity beginning at approximately the left half of the superior portion of the bladder to and beyond the bladder ureteral orifice. My suspicion was aroused least a recurrence was developing in this seeming area of deformity.

CYSTOSCOPIC EXAMINATION revealed a smooth bladder wall, the vessels were not injected.

There was a slight intra urethral lobe projection which was assumed to be the result of fibrosis or bladder wall thickening following radiation.

Dr. Vincent O'Connor stated that had he not been acquainted with the past history he would have declared the bladder negative, and knowing the history he was still willing on his cystoscopic findings to declare it so. Dr. O'Connor incidentally was not the consulting urologist since the case was referred to the Mayo Clinic and the courtesy of this examination was through the graciousness of the attending physician and Dr. O'Connor so that this report might be more complete.

I present this case not to impress you with the idea of a cure in the true sense of that word, but to bring to your attention the filtration used, the total "r" units and the result obtained by such filtration and dosage, appreciating the fact that many of us must curtail our ambitions to use filtration and dosage of, shall I say, a more generally accepted standard, but where the skin reactions and sequelae incidental to such methods is by far of greater intensity and where for reasons such reactions must be avoided, this method may be used.

Whether this practice will give as long life as the more intensive deep radiation, remains still to be seen, perhaps with the advent of the fifth year another report can be made. Knowing what I know now of the reaction obtained with this filtration and dosage, I feel that I might have safely given 1,250 "r" additional, i.e., 250 "r" to each of the five areas or a total of 1,000 "r" to each port of entry.

660 Groveland Park.

DIAGNOSIS OF OCCUPATIONAL DISEASES BY THE GENERAL MEDICAL PRACTITIONER

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This is the first of a series of articles on the important subject of Occupational Diseases seen by the general practitioner of Medicine.

The purpose of these articles is to call the attention of the general practitioner to the fact that many cases of poisoning or disease caused by exposure to harmful substances in industry

are not correctly diagnosed and treated. This is because the doctor consulted has not taken a really careful and thorough history; has not inquired into the patient's occupation, or if he has, has failed to find out to what harmful substances he has been exposed. Because the occupational history is absent or inadequate the doctor fails to make a really intelligent and complete examination, including laboratory findings, and does not arrive at the correct diagnosis. Having failed to make the correct diagnosis, his treatment must of necessity be incorrect — the proper treatment being, 1. to have him avoid further exposure, and 2. to give the patient the benefit of the latest forms of treatment for the condition from which he is suffering.

Let us just refer to lead poisoning as an example. Lead poisoning is one of the commonest occupational diseases, because the use of lead and its compounds is so widespread in industry. One could easily list a hundred or more industries which are sources of lead poisoning, acute or chronic. The organs and tissues of the body which may be injured by lead circulating in the blood stream include: 1. the blood, 2. the gastro-intestinal tract, 3. the nervous system, 4. the muscles and joints, 5. the heart and blood vessels, 6. the kidneys, and 7. the reproductive system (the germ cells). For this reason the symptoms of lead poisoning, like those of syphilis, may be very diverse and may be referable to almost any organ of the body. Unless lead poisoning is thought of, (and this is most unlikely unless an accurate and complete history is taken, including the occupational history in detail) a particular case may be mistaken for almost any disease known of in medicine. And this has occurred over and over again. Cases of lead poisoning with lead colic have been diagnosed and operated on as cases of acute appendicitis, acute intestinal obstruction, and acute gall bladder disease. Patients with lead encephalitis (inflammation of the brain) have been operated on under the incorrect diagnosis of brain tumor. Recently a patient was sent to and even died in an insane asylum as a case of insanity, having never been diagnosed or treated as a case of lead poisoning. Similar gross and apparently inexcusable mistakes in diagnosis and treatment continually occur in occupational diseases due to many other toxic substances used in industry.

Why do such mistakes occur? The chief rea-

son is because the average general practitioner sees so few cases of industrial or occupational diseases in his practice. Therefore he is likely to fail to think of an industrial or occupational exposure in any particular case.

As was pointed out by R. R. Sayres, M. D., then Senior Surgeon, United States Public Health Service, in a paper, "Health Promotion in Industry" (*Industrial Medicine*, Vol. 7, Number 7, July 1938, pp. 410-415), "According to our last Federal census, there were approximately 49 million people gainfully employed, and all of these should come within the scope of industrial health programs. . . . What makes the problem somewhat more difficult is the fact that the majority of our workers are employed in small units, which at present have no practical means of furnishing adequate industrial health services to their employees. For example, more than eight million persons employed in manufacturing plants alone, approximately half are found in factories with less than 250 workers."

In 1938, Lewis DeBlois, Past President of the National Safety Council, pointed out (*Industrial Safety Survey*, Vol. 14, September-October 1938, No. 5, pp. 133-142) that in 1935 the total number of American industrial establishments was 169,111 and that the total number of wage earners engaged in them was 7,378,854. His figures show that the distribution of all these wage earners is roughly one third each, to establishments employing 0-11, 101-500, and over 500 employees, and that 91.8% of the establishments employ 100 or fewer workers.

Number of Wage Earners employed at Establishment	Total Wage Earners in the group	Per cent. of Total Establishments
100 or under	2,134,916	91.8%
100-500	2,452,211	6.9%
Over 500	2,791,727	1.3%

The 1930 Census of Manufacturers lists 15,333 manufacturing establishments for Illinois with a monthly average of 691,555 wage earners (i.e., exclusive of office, supervisory and other salaried workers). Over 45 per cent. of the wage earners were employed in establishments having 250 wage earners or less, and 59 per cent. in establishments employing 500 or less wage earners. The latest census of Manufacturers, for 1937, does not show the number of wage earners by size of establishment; however, there were approximately the same number of wage earners and it is probable that the relative proportions employed in smaller concerns were very similar

to the proportions noted for the year 1929. The 1930 Census of Manufacturers showed that 91.3 per cent of the plants in Illinois hired 100 or fewer workers, and that 96.6 per cent hired 250 or fewer workers.

Paul A. Neal, surgeon, Chief, Division of Industrial Hygiene, National Institute of Health (Industrial Medicine, Vol. 9, No. 12, December 1940, p. 630) in an article on "Industrial Health and National Defense," points out that "of our workers" . . . "only 15% have full time medical services."

It is very unlikely that any establishment hiring 100 or fewer workers will have a full time industrial physician at the plant, one who can be thoroughly familiar with the materials used and the various processes carried out in the plant, i.e. the manner in which the materials are used.

The American College of Surgeons has established a "Minimum Standard for Medical Services in Industry," and each year publishes a list of "Industrial Establishments Conducting Medical Services Which are Approved by the College." In 1939 (Approval Number, Bulletin of the American College of Surgeons, Vol. 24, No. 5, October 1939, pp. 446-447) the list for Illinois contained the names of only 56 concerns.

In the large plants full time physicians are employed to look after the health of the employees, and these full time industrial physicians are familiar with and think of industrial health hazards and the resulting occupational diseases. However, millions of workers in the smaller plants, when taken ill, call on the family physician or are treated by some general practitioner. Because he sees but few occupational disease cases the general practitioner is likely to be unfamiliar with them, and consequently, likely not even to think of an industrial exposure as the cause of a case that comes to him.

Until recently very few medical schools offered courses in industrial medicine. Consequently few physicians have had adequate instruction concerning occupational diseases. Some medical schools have added such courses to their curricula in the past few years. This should do much to improve the recognition of occupational diseases in the future.

There are a limited number of good reference books on occupational diseases. The encyclopedia "Occupation and Health," published by the International Labor Office,¹ consisting of two

large volumes and yearly supplements, is perhaps the most valuable single treatise on the subject.

Valuable pamphlets and other publications are issued from time to time by the United States Department of Public Health and the United States Department of Labor. Bulletin No. 582 of the United States Bureau of Labor Statistics, United States Department of Labor, entitled "Occupational Hazards and Diagnostic Signs,"² contains valuable information relative to industrial diseases and their causes. These pamphlets may be obtained by the general practitioner from the agencies listed.

There are a few excellent magazines dealing with industrial medicine, industrial hygiene and toxicology. It is essential that a physician be familiar with the contents of these publications to keep abreast of the rapid advances and changes in the field.

Meanwhile, however, the number of industrial physicians in this country is far below our requirements, as Morris Fishbein, M. D., Editor, Journal American Medical Association, has pointed out. In an article entitled "Industrial Health and the General Practitioner" (Industrial Medicine, Vol. 9, No. 12, December 1940, p. 631) he states that "the American Medical Association has sent a questionnaire to every physician in the country to determine his availabilities for military or other services. More than 175,000 physicians have been queried and more than 120,000 replies are already at hand. It is apparent from the replies that have been received that there are *probably less than 5000 physicians in the entire United States who can qualify as especially competent in the field of industrial medicine. . . . Only 1,283 physicians especially qualified in industrial medicine could be recorded as actually competent in the field.* The important point to emphasize is that *every physician, when taking the history of any patient, should as part of routine questioning, inquire as to the patient's employment, if he has any, and should inquire in detail as to the nature of the processes in his occupation, the names of the materials handled and how they are used, and the by-products formed. A great many of the substances and materials used in industry*

¹The International Labor Office, Washington Branch, 734 Jackson Place, Washington, D. C., Occupation and Health, Volumes I and II, price \$30.00.

²Available through Superintendent of Documents, Washington, D. C. — Price five cents.

The manifestations may closely resemble symptoms of non-industrial disease. The true cause of the ailment in these cases may be ascertained only after several workers have died and autopsies have been performed, the occupational and clinical histories have been analysed by some competent industrial physician, and animal experiments have been carried out.

The average general medical practitioner usually is unacquainted with actual working conditions and even the common exposures in the various industries. Where new toxic substances are used he could not be expected to recognize the casual relationship between the use of such a substance and some puzzling ailment. There are literally hundreds of new solvents alone.

In order that the general practitioner may have some idea of the relative frequency of the various Occupational Diseases that cause disability and lost time to workers in Illinois, the following table is presented. This shows the total number and relative percentages of all of the occupational diseases for which disability claims were filed with, and awards were given by the Illinois Industrial Commission, or were settled otherwise, either by insurance companies or by the employers, during the first two years of operation of the Illinois Occupational Disease Act of 1936.

The table is a summary of all Arbitration Awards and Settlements made in cases of claims filed prior to November 1, 1938, the records of which were in the Occupational Disease Files of the Industrial Commission, available for classification and verification as of January 1, 1939.

The above list of cases probably does not at all represent the number of individuals who suffered from or were disabled by occupational diseases in Illinois during this period. Undoubtedly many were mis-diagnosed or failed to file a claim.

The relative incidence of the various occupational diseases listed varies from year to year in every State, depending on many factors. For example, in several States, during this same period, Dermatitis accounted for some 60 to 65% of all occupational diseases for which disability was paid, whereas in Illinois it accounted for only 22.5%. In Illinois, again, its incidence varies greatly from year to year.

Since 1937 the number of *Lead Poisoning claims*, both the total number and the relative

number, has been steadily *decreasing*, year by year. This is shown in the following table.

OCCUPATIONAL LEAD POISONING CASES REPORTED IN 1937, 1938 and 1939

Occupational Disease Cases	1937	1938	1939
Total Number Reported — All types	470	393	539
Number of Lead Poisoning Cases	52	70	231
Per Cent. Lead Poisoning Cases	11.1%	17.8%	42.9%

The number of *Dermatitis claims*, on the other hand, has been *increasing*. For example, 361 or 41.8 per cent. of the 863 compensable occupational disease cases reported in Illinois during the years 1938 and 1939 were for skin diseases caused by irritants.

The total number of skin disease cases caused by irritants reported in 1937 was 163, in 1938 was 176 and in 1939 was 185.

Among some of the common disabling occupational diseases, a few of the more interesting and important for the general practitioner to be familiar with, are as follows:

- Lead poisoning
- Dermatitis
- Silicosis
- Poisoning from Benzol and Benzene Derivatives
- Poisoning from Chlorinated Naphthalens and Chlorinated Diphenyls
- Poisoning from Trichlorethylene
- Poisoning from Carbon Tetrachloride

The articles to follow will deal with these subjects and it will be the aim to present briefly such facts as to render it possible for a general practitioner of medicine, without any industrial experience, to recognize the industrial occupational relationship of the cause and to understand the condition, when such a case comes under his care.

CARDIAC PAIN — CLINICAL INTERPRETATION

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As practising physicians we all encounter cases of cardiac pain and at times we have difficulty in the proper classification of this pain. In fact, there are six categories of thoracic pain for which the heart and great vessels are responsible.

Read before the meeting of the Chicago Heart Association at the Cook County Hospital on March 29, 1940.

1. Precordial aching or heart ache, and short, sharp stabs of pain.

These pains are due to hypersensitiveness of the nervous system from fatigue and occur usually in functional conditions such as effort syndrome, etc. If the ache is present in heart disease it is interpreted only as a complication and not due to heart disease. The pathogenesis is usually due to a thumping of the heart, whether normal or diseased, against an over-sensitive thoracic wall. Short stabs of pain are often caused by extra systoles.

As an example of the above we can cite the following types of cases: —

CASE I. A.S., male, aged 49, business man, has always carried a blood pressure around 160-180. His cardiac reserve was normal and he showed none of the clinical manifestations of cardiac failure. One evening while sitting in a movie theatre, he experienced a sudden short stab of pain in the precordium. He claimed he felt weak and immediately went to his doctor, who made a diagnosis of acute coronary thrombosis, and kept him in bed for six weeks with a very uneventful recovery. A review of his case later showed no signs, clinically or electrocardiographically of coronary disease. However, he did show an occasional ventricular extra systole. The diagnosis was changed to hypertension and ventricular extra systoles. He has remained well for over two years.

CASE II. Mrs. Smith, aged 36, has complained for a number of months of precordial aching, which was fairly constant. She was very apprehensive and claimed that she was somewhat dyspneic on exertion. Physical examination, electrocardiogram, and fluoroscopy revealed no abnormal findings. She had a number of tender areas over the precordium. A diagnosis of neurosis or neurocirculatory asthenia was made. Relief was obtained by infiltration of the subcutaneous tissue with 2% novocain solution.

CASE III. S.G., aged 39, male, has been a moderate hypertensive for a few years. In the last three months, he has also complained of more or less precordial aching. His physical examination showed the signs of a compensated hypertensive heart. The electrocardiogram simply showed a left ventricular preponderance with a negative T1, which was due to the hypertension. He also had multiple tender points on direct palpation over the precordium. A diagnosis of hypertensive heart disease (compensated) and neurocirculatory asthenia was made. He was assured that he did not have coronary disease. His future course for the ensuing year was uneventful.

The second type of pain that we encounter is:

II. Anginal pain or angina pectoris; the pain here being dependent on insufficiency of the coronary circulation. The symptoms are well

understood by all, so that the clinical description can be omitted here. One knows that the pain may be brought on by exertion, excitement, or the eating of a heavy meal, and in severe cases the pain may come on at any time, day or night. It has been a common clinical observation to see anginal syndromes in severe anemias; primary, such as pernicious anemia, and secondary anemias; in thyroid disturbances, such as hypo or hyperthyroid states; in luetic heart involvement, and in the paroxysmal tachycardias. I have recently heard of a case of angina pectoris which was due to partial thrombosis of the left subclavian artery. One knows that the radiation of the pain may be in other places than down the left or right arms (ulnar distribution) of the fingers; and that the pain may radiate to the neck, face, back, ear, subclavicular region, and epigastrium. It is also well known that the pain may be diverted from its normal course by a superimposed arthritis, infected tooth, ear, etc. Other conditions which might be confused with the anginal syndrome are: left sided arthritis of the shoulder, subdeltoid bursitis (left shoulder), neuralgia of the brachial plexus, cardiospasm, herpes zoster, and spondylitis of the lower cervical and upper thoracic vertebrae.

CASE I. S.B., aged 48, male, had typical anginal pains for a year, which radiated down his left arm to the fingers (ulnar distribution). One day he developed a severe toothache, and in his excitement, which precipitated an anginal attack, the pain radiated to his tooth. We hear of referred pain to the ear with an otitis media, etc.

CASE II. Mrs. C., aged 36, was suddenly taken with a severe precordial pain and faintness, lasting two hours. She felt as if she were going to die. Her doctor made a diagnosis of acute coronary thrombosis, and proceeded to treat her accordingly. Examination then showed a very rapid heart rate of 190 which responded immediately to right carotid sinus pressure. The diagnosis of paroxysmal auricular tachycardia was made in place of that of coronary disease.

CASE III. Mr. P., aged 52, complained of precordial pain only after eating his heavy meal for the last three or four months. He had no anginal syndrome with effort or excitement. He complained of a slight selective dyspepsia. He had no dyspnea or palpitation. Physical examination, fluoroscopy, and electro-cardiogram were normal. A gallbladder visualization showed poor concentration of the dye. A diagnosis of gastroduodenal reflex was made, and proper therapy instituted for his gallbladder, with frequent light diet. He has had no cardiac complaints now for the last six months.

It is well known in medicine that the only two heart conditions associated with pain and collapse are due to acute coronary thrombosis and pulmonary embolism. In all too many cases of severe precordial pain do we make the diagnosis of coronary, and seldom that of pulmonary embolism. We all realize that there is a typical electrocardiogram of coronary disease, though most of us forget that at times we can get a picture which is fairly typical of pulmonary embolism. We know practically that most pulmonary emboli originate in the deep veins of the leg and pelvis, and that it may come occasionally from the right heart, or even the left, as a paradoxical embolus due to a patent foramen ovale. There are many pathological conditions which simulate coronary disease very closely. Chief among these are the hypertensive crisis, pneumonia, spontaneous pneumothorax, diaphragmatic hernia, epidemic pleurodynia, dissecting aortic aneurysm, acute fibrinous pleuritis, periarteritis nodosa of the coronary artery, and acute abdominal conditions.

CASE. One of the conditions which may be confused with acute coronary thrombosis is that of hypertensive crisis. An example of the above is the report of the following case:

J.S., male, aged 49, has carried a hypertension of 160-180 systolic for over a year. He showed the usual findings of hypertension, with a left ventricular preponderance and a negative T1 in his electrocardiogram. One night he was awakened from his sleep with a very severe precordial pain lasting two hours. His blood pressure taken during his attack was 240/120 — a rise of 60 points over his usual hypertension. The next day he felt well. His cardiogram showed no findings indicative of a coronary thrombosis. A diagnosis of hypertensive crisis was made.

Other causes of cardiac pain that one sees in the active practice of medicine are: (1) the pain associated with pericarditis, (2) the pain in an acute rheumatic carditis (this pain may last for a few days in a severe rheumatic infection) (3) we are all acquainted with the pressure pain in an aortic aneurysm, and a few of us have seen (4) the severe, excruciating, tearing pain in a dissecting aortic aneurysm.

Thus one can see that there are numerous pathological conditions that can cause cardiac pain, and that in the proper analysis and interpretation a correct diagnosis of the causation of the pain can be made. Quite a number of cases are diagnosed as acute coronary thrombosis or angina pectoris, when as a matter of fact,

some other condition is present. It seems that the easiest way out of a diagnostic difficulty associated with the symptom of cardiac pain, is that of a coronary or anginal condition. One hopes that this may give a clue to some of the other pathological conditions associated with cardiac pain.

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CARE OF THE FEET OF NORMAL CHILDREN

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For the purpose of this paper, no attempt will be made to enter into any technical argument as to just what constitutes a normal child or a normal foot. Obviously it is impossible to set a rigid standard for any physiological structure, and any attempt to narrow the definition results in mildly interesting but relatively unimportant verbiage. Several excellent books and papers have appeared recently with comprehensive reviews of the anatomy and the function of the foot. And while differences in opinion exist and are expounded convincingly, fundamentally the foot remains as one of the principal elements of locomotion. Bearing all the weight of the body, made up of a complex series of bones, joints, muscles and ligaments, it is subjected to terrific stresses which must be met at unexpected as well as at expected times. It would more than tax the ingenuity of a structural engineer to design as excellent a piece of machinery to serve its function. Yet there is no part of the body which is more neglected or more abused than the human foot. The lay person looks on the average foot as an unsightly appendage and for thousands of years the appearance of the foot has been subjected to alterations by almost constant binding or strapping or by forcing it into ill-fitting coverings. The female of the species has not been alone in this attempt to improve upon nature's handiwork for, in the Middle Ages in particular, the men assumed their natural role of peacocks and some of the male footwear of that period would put to shame many of the female creations of today.

Now we are in the age of camouflage in footwear and, while it is true that at this cycle the

male footwear is in general satisfactory, the female footwear perpetrates atrocities which only the hardest can endure without hobbling or tripping along as though on stilts. Under bridge tables, under the seats of movie theaters, under park benches rest hundreds of shoes while their owners seek a few moments of relief by permitting their feet to escape from the leather and cloth vises, and cautiously they wiggle their toes like birds with broken wings testing the appendages to see if the function is yet intact. Woe to the lady whose feet have reached the limit of endurance and like swollen flood rivers can no longer be confined to the barriers. Then she must beat an ignominious retreat, paddling along in her stockinged feet and carrying the offending shoes in her hands. Such circumstances are far from uncommon. One wonders what diabolical pleasure the designers of women's style shoes derive from their creations. It might well be considered a sadistic tendency were it not for the evolutionary cycle which such creations go through and the hope that eventually either reason or necessity will prevail.

The medical profession as a whole has shirked its responsibility in the care of the feet and has graciously presented the care of one of the most important structures of the body to ill-trained or commercial interests. It may well be considered a reflection on our profession that we either consider it beneath our dignity to care for ordinary ailments of the feet or that we retreat from the difficult situations which arise in treating structures that combine both social and anatomical complications. Yet we bravely assume our natural dictatorship over other structures which combine such elements to much greater degrees. The foot is, of course, only a part of the lower extremity and that of the rest of the body. To try and isolate the foot and its function from the entire body is a grievous error which is often indulged in by amateur shoe salesmen and others not thoroughly versed in comprehensive human anatomy. Quite often we see pitiful attempts made to adapt footwear or other prosthetic appliances to a deformed foot which is in itself secondary to trouble elsewhere, which if properly treated, greatly enhances our opportunities of permanently benefiting the patient. Cases of residual infantile paralysis with marked deformity of the entire extremity, congenital dislocation of the hip, cerebral palsy

and many other such troubles are often harmed by well-meaning but uninformed persons attempting to treat the foot as the primary source of the disturbance. All cases of foot disturbances should be thoroughly examined by trained physicians and surgeons with the idea of treating the deformities in all their ramifications.

While it is true that the Chinese realized that in order to change the size of the human foot it was necessary to start altering the foot of the baby, it is also true that in order to properly protect the natural growth of the foot it is necessary to guard the infant's and growing child's foot against dangerous influences. This paper is not directed toward the treatment of foot deformities, but one cannot refuse an opportunity of cautioning the medical profession against delay in treating foot deformities of infants. The old idea of permitting babies with clubfoot deformities to wait at least one year before having treatment started deprived that baby of the most valuable year in which satisfactory correction could be obtained. The time to start treating such cases is as soon as you see them. The first year of life offers much more hope of correction of a clubfoot deformity than any subsequent five-year period. Nor should such deformities be considered lightly. No single orthopedic deformity presents more difficulties than an advanced clubfoot. Even after primary correction has been obtained, constant observation must be maintained for subsequent relapse is common. All foot deformities of infants or children should be studied carefully and corrective measures instituted immediately. The old idea that the child will outgrow many foot deformities is not only dangerous but pernicious. Most foot deformities tend to become worse as growth progresses and the only safe way of handling such events is by skilled treatment and observation.

There are, of course, variations from any standard form of any anatomical structure all of which may be considered normal. Some babies' feet are long and narrow, others short and fat. In some the front part of the foot tends to turn in, in others a more or less straight line is present. Provided that the weight-bearing lines extend along the recognized physiological points and that unusual rigidity or unusual relaxation is not present, that all the ordinary appendages are present and in usual relationship, the feet may be considered normal. Even at birth, defi-

nite bony and cartilaginous structures may be felt and the relationships observed. As the baby grows the pudgy appearance and feel of the foot changes and bony prominences become evident. The toes spread apart, the heel becomes more recognizable and definite longitudinal arching of the inner side of the foot is observable by sight. Such definite arching was present at birth but could only be observed by palpation. As the child develops, the heel continues to become more definite, the longitudinal arch more marked and the lateral spreading of the forefoot in relation to the heel more pronounced. The toes continue to be well spread apart when the child walks; weight is borne on the heel, the outer side of the foot, across the anterior arch and across the heads of the first and second metatarsal bones. Of course, weight is actually borne on all the structures, but the above mentioned structures show most of the external evidences of weight bearing and serve as criteria for observation. Feet which show unusual rigidity, unusual relaxation, unusual lines of weight bearing or faulty positions cannot be considered normal and reserve special attention.

How can we preserve the normal foot and encourage its development as a first class useful structure? More and more we are being consulted by mothers who do not believe there is anything wrong with their children's feet but who are wholly confused by the contradictory advice as promulgated by magazine articles and competing shoe salesmen. Any observer can choose a group of women's or children's magazines and find contradictory advice by so-called eminent authorities. Recently one such article told of the dangers of permitting a baby to wear soft shoes — the shoes must be hard-soled with adequate support for the tiny, soft structures. Another equally popular magazine carried an article warning of the dangers of the supporting shoe on babies since it weakened the foot by its support and did not permit the muscles to get proper exercise. Most confused of all is the parent who commits the error of going into two stores specializing in children's shoes and hearing the competitors outline the disastrous results which will ensue if the other's wares are purchased. What can we tell the parents of the child with relatively normal feet? Should we advise full shoes, oxfords, hard soles, arch sup-

port features, round toes, moccasins, rubber-soled shoes or what?

A few simple rules based on common sense, anatomical and physiological sense and observation may be of profound value. As Alexander Pope wrote,

"'Tis education forms the common mind;
Just as the twig is bent the tree's inclined."

This is of practical value here for, as we can alter the form of adult feet by confining the infant foot, so can we permit the normal foot to develop properly by restraining its development as little as possible. What excuse is there for immediately putting full hard-soled shoes on babies? What protection do the normally developed structures need? The baby starting to walk seldom pounds on hard floors, but on rugs and pads in the play pen. It is doubtful if hard floors would be injurious at any rate. The finely balanced mechanism of the foot needs unconfined exercise in order to develop the intricate network of muscles and strengthen the ligaments. Going barefoot or with socks or booties or moccasins is the best method of permitting foot development.

When should real shoes be put on? Climate permitting, real shoes should be worn only when the neighbors become too persistent about the mistreatment of the child. We are living in a social environment and must subscribe to the minimum of its dictates. So shoes must be worn. These should be as soft and flexible as possible — oxfords preferred. Permit as much muscle play as possible. The least heel available the better. The idea that girls need more height of the heel than boys is another superstition with no foundation whatever. Not so many years ago, the reverse was believed to be true and boys' heels were higher than girls'. Keep the heels as close to the earth as possible. Shoes should be cut full and plenty of toe room available. If the edge of the oxford gaps across the instep or under the lateral malleolus, it is of little consequence. The size of shoes should be changed frequently as the child grows.

Under no circumstances should shoes be fitted with an effort made to keep the foot from spreading. The normal foot should grow to its normal size and shape and no effort of molding made. As soon as we tamper with the architecture of the normal foot by attempting to limit its growth in any direction we are courting trouble. Stay

away from arch supporting features unless the feet are abnormal. Rigid arch supports do weaken normal feet and prevent proper muscular, bony and ligamentous development and result in weak feet. Permit the child to go barefoot if conditions are satisfactory. The price of shoes is no indication whatever of their value to the feet. More expensive shoes often are made of heavy leather and are too rigid. The shoe should accommodate itself to the foot, not the foot to the shoe. "Hand-me-downs" are often doubly expensive in the long run. It is much safer to buy a pair of cheap properly fitted shoes. Err on the side of having the shoes too large rather than too small. If the shoes are the correct fit, it makes no difference whether the soles are of leather, rubber or composition, or whether they are perforated or solid. Light perforated shoes or sandals are certainly more comfortable in hot weather.

In conclusion, use "shoe sense" for "horse sense." We never think of making any normal structure stronger by restricting its function. Exercise must be available for proper development and shoes built like plaster casts will weaken and not strengthen feet.

SUMMARY:

1. Normal feet of children should not be restricted by stiff shoes.
 2. Low, flat heels or no heels at all on shoes are desirable for both boys and girls.
 3. The normal foot is benefited by barefoot exercise.
 4. Any deviations from the normal should be studied and treated by skilled physicians and surgeons.
 5. Feet cannot be considered separate parts of the body but must be viewed as important elements of the entire human mechanism.
- 8 South Michigan Avenue

DISCUSSION

Walter R. Fischer, Chicago: The contents of Dr. Sofield's paper are exactly right and I for one highly appreciate the fact that he has brought this subject about normal feet before the Society. I have no criticism to offer on Dr. Sofield's paper. The items presented have been plain and true. Nevertheless I would like very much to take this opportunity to add a thought or two on the subject. The importance of proper management for the growing feet of a normal child cannot be overestimated. Such management begins at the hour of birth by a comprehensive examina-

tion by the attending obstetrician. It is at this point and no later than the normal should be differentiated from the abnormal and the avenues for obtaining proper advice in either instance explained clearly to the parents. Next, the little infant pronounced perfect at birth must soon face the hazards of the many influences that appear to disturb the natural development such as injury, disease, rapid growth and increase in weight, all of which cast their specific affects upon the burden bearing feet. The proper time for parents to obtain information from the physician about the child's foot is not at the appearance of limp, pain or distortion, for these symptoms too often represent an advanced stage of a process that has been going on for some time and that should have been recognized or prevented at a much earlier date. Therefore another additional factor of importance in the management of normal growing feet is a program for the parents to follow presented by the physician, the competent authority on all foot matters. This program should include routine examination of the feet at stated intervals by a physician interested in feet. Dr. Sofield made his mildest statement when he mentioned the fact about the medical profession shirking its duty in the care of the feet. By virtue of the physician's broad medical background, foot problems whether they concern cure or prevention are always physicians problems. It is my most sincere desire to see Illinois physicians lead in the adoption of some logical plan for the observation and management of the growing feet of normal children.

COCCYGODYNIA: ITS DIAGNOSIS AND TREATMENT

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The diagnosis of coccygodynia can be established only by a careful history, minute physical examination and roentgenography. By such a diligent search most of the painful conditions in this region will be eliminated as not true coccygodynia.

Digital manipulation, the index finger in rectum and the thumb outside, will reveal the position, mobility and tenderness of the coccyx. Passive motion should produce the pain of coccygodynia. The pain is usually present during defecation or urination or when sitting, but its character is variable. The patient generally rests on one buttock, with the other one elevated to remove pressure from the coccyx.

Coccygodynia is to be thought of in every patient presenting anal or sacral pain, but because of the more common lesions of the rectum and other pelvic organs this condition frequently

goes unrecognized or is improperly treated for some other affection.

Anal or rectal lesions, such as ulcer, hemorrhoids, proctitis, fissure, cryptitis, fistula, foreign bodies in the rectum, or scars of previous operations, may induce suffering which simulates coccygodynia by involvement of the nerves controlling spasms of these anorectal and perineal muscles.

Pilonidal cyst is the most common lesion from which a painful coccyx is to be distinguished. There is usually a dimpling of the skin in a cyst, and when infected the cyst will have a discharging sinus. There is little or no pain occasioned by the rectal examination of a pilonidal cyst because it is dorsal (posterior) to the sacrum.

The close resemblance in clinical history of coccygodynia to vaginismus is to be thought of in some cases. In each condition there is an involuntary spasm of a group of muscles some of which are attached to the coccyx or to the fibrous central point of the perineum. There need be no real hyperesthesia of the parts, but there is a different sensation in the skin around the genitals, perineum and anus from that of the skin elsewhere on the body and tactile sensations coming from this region supply a different cerebral stimulation and the deeper structures, pelvic fascias and perineal muscles are sensed differently from the same types of tissue elsewhere. Movement of the perineal muscles are felt differently from movement of the muscles of the arm. Vaginismus is an involuntary spasm of the sphincter cunni and other muscles of the pelvic floor by attempts at coitus or digital examination. There is present usually no real hyperesthesia of the parts, the muscular spasm being the result of a mental reflex.

Masturbation, either manual or through voluntary setting of the muscles about the perineum and thighs may be a counterpart of coccygodynia. Hamill reported a case of this character.

In studying the type of cases it is to be remembered that the feeling tone of the sexual organism is a muscular spasm. If this spasm of muscles is rightly timed and coordinated the organism is a voluptuous sensation, but if it is premature or improperly conditioned, the result may be a painful cramp-like contraction of the muscles of the perineum, at least those that are concerned in the essentials of copulation. In

any of the purely neurotic subjects the psychic reflex is maintained by the constant subjective discomfort of the perineum and coccygeal nerves.

The rectal crises of tabes must be carefully differentiated and as these belong to the prodromal and preataxic stages of this disease their recognition may be most difficult. The pain of tabes is a stabbing or boring sensation, shooting through the perineum or down the legs and lasting for a brief interval of time. Martin has described a peculiar loss of tone and muscle sense of the rectal sphincters. There is also diminished sensation of the areas of the skin about the anus from the coccyx to the scrotum or vulva. A sense of fullness in the rectum as of incomplete defecation or a frequent passage of a small amount of feces are often mentioned and may be mistaken for dysentery, but are in reality the effects of the anal tenesmus.

Lesions of the conus medullaris, that portion of the cord extending from the filum terminale to and including the third sacral segment are characterized by paralysis of the sphincters of the bladder and rectum and with loss of sexual powers. There is also a saddle-shaped area of anesthesia involving the skin about the anus, perineum, scrotum, penis and the mucous membrane of the urethra and anus.

As the spinal cord terminates at the second lumbar vertebra, tumors or injuries below this point produce nerve symptoms only in so far as they compress or destroy the lumbar or sacral roots (cauda equina). If partial, there results paralysis of the groups of muscles and circumscribed areas of anesthesia with radiating pain in the course of the affected roots. Thus there may be lancinating pain in the anal and rectal canals or there may be rectal incontinence. In an exceptional case there may be isolated paralysis of the bladder or rectum. Besides tumors in the membranes of the cord or on the nerve roots, fractures or spina bifida may produce these same symptoms. Arthritis, nontraumatic, is to be excluded. Cauda equina may cause pain referred to the coccyx, with sensory anesthesia and paralysis which may be flaccid or spastic. Childbirth injuries play a very minor role.

PROGNOSIS

The prognosis of coccygodynia, whether it be symptomatic or true disease, should always be kept in reserve. Duncan¹ studied 278 patients

of whom 97 per cent. were females; 89 per cent. recalled injury to the coccyx.

Only 54 patients were followed up, but of these 97 per cent. obtained relief within six months. 11 per cent. had operative resection with complete relief in 74 per cent., partial relief in 9 per cent., no relief in 17 per cent.

TREATMENT

Manipulation of the coccyx is a recognized procedure and is beneficial in certain cases of arthritis, adhesions and displacement. Hobart² anesthetizes his patient with nitrous oxide, places him on his abdomen, and with his index finger within the rectum and thumb externally over the coccyx manipulates the bone forward and backward. This procedure loosens the adhesions and relieves congestion about the nerve plexus. Milder massages, without an anesthetic, are given every two or three days until all pain has disappeared.

In other cases the prolonged application of heat by means of the rectal douche or the Elliot machine is of much value. Each day our patient is given a hot rectal douche at 105 degrees F. for ten minutes, and this is followed by a hot sitz bath at 110 degrees for thirty minutes. Some patients feel faint when taking this hot sitz bath and we have substituted the hot pelvic pack.

For the hot pelvic pack a comfortable couch has a woolen blanket spread out on it in such a way that when the patient lies down upon it the sacrum will rest in the center of the sheet each way. Another woolen blanket is folded diagonally, like a napkin bandage, and laid across the table with the apex pointing down and the base at such a point that as the patient rests upon it, the upper edge of this blanket will be two inches above the umbilicus but well within the upper limit of the under blanket. Another woolen blanket somewhat smaller is also folded or cut cornerwise and wrung as dry as possible out of water at 160 degrees F., and laid over the first triangular sheet. The patient now lies upon the couch face upward, and in such a position that the upper border of the wet sheet will be at about the level of the umbilicus. The legs are drawn up and the knees widely spread. The apex of the wet sheet is now drawn up until it fits the perineum tightly, the apex resting upon the sternum, the sides being spread

out over the abdomen as much as possible. The legs are now extended, and the lateral triangles of the wet sheet are brought over one by one and wrapped about the thighs in such a way that the skin of the abdomen, hips, thighs and perineum is everywhere covered with the sheet. The apex of the triangle is now turned down over the abdomen.

The outer dry triangle sheet is now adjusted in the same way. The patient is then wrapped in the large woolen blanket first spread upon the couch. The patient's head being protected with a cool compress, now rests in these wrappings for twenty minutes. This pack is changed for a second and perhaps a third application.

Each night the therapeutic lamp is applied over the coccyx for an hour.

This treatment exercises a powerful revulsive effect upon the pelvic viscera and stimulates the sympathetic nerves of these parts and is a most valuable analgesic measure.

The mental attitude of the patient is a matter of great import and may require the help of a psychotherapist. A change in the emotional status, a feeling of contentment rather than of despondency helps much. Also, when definite, even though slow, improvement rewards our treatment we must constrain our patients to bear with us and not discontinue our treatment too early.

EXCISION OF THE COCCYX

If patients do not obtain relief by diligent trial of physiotherapy, the coccyx must be excised.

The patient is placed on his abdomen with the foot of the table lowered. Caudal or low spinal anesthesia is used. The operative field is prepared with tincture of iodine, the excess being removed with alcohol. The sacrococcygeal articulation is determined and also the tip of the coccyx. It is not usually necessary to insert the finger into the rectum. A midline incision begins just above the sacrococcygeal articulation and extends vertically downward to below the tip of the coccyx. The skin and fascia are divided to the bone. Its posterior surface and lateral borders are well exposed. It is then disarticulated by severing it from the sacrum and beginning at its upper end it is lifted out. As the coccyx is drawn backward, its anterior surface is freed from above downward being

careful to avoid injuring the rectum. The exposed end of the sacrum may need to be smoothed off with a rongeur or a curette. The lateral sacral arteries may need to be ligated separately. When the bleeding is thoroughly controlled, the incised muscles are sutured together separately and deeply with interrupted chromic catgut. The skin is closed with dermal sutures. The wound is covered with a collodion dressing.

BIBLIOGRAPHY

1. Duncan, G. A, Painful Coccyx, Arch. Surg. 34: 1088, 1937.
2. Hobart, M. H.; Manipulative Treatment of Coccygodynia, Surg. Clin. N. Amer. 579, 1937.

58 East Washington Street

VITAMIN E FOUND MUSCLE, NERVE AID

LONDON—Vitamin E, known as the fertility vitamin from wheat germ, is being hailed in medical circles here as a probable cure for hitherto hopeless diseases of muscle weakness and nerve degeneration.

It is also seen as a possible means of protecting children against infantile paralysis and adults against locomotor ataxia.

Striking results in treating more than a score of human patients suffering from incurable and even fatal muscle weakness and nerve degenerative diseases with vitamin E are reported by Dr. Franklin Bicknell, honorary physician to the Farrington Dispensary here, in the medical journal, *The Lancet*.

The vitamin should also be used to protect children against infantile paralysis, at least during epidemics, Dr. Bicknell declares, though his report does not include such use of the treatment.

FIND NEW TYPE PNEUMOCOCCUS

NEW YORK—Discovery of a new kind of pneumonia germ, responsible for more illness than some of the other types, and development of a serum for detecting its presence and treating its victims are announced here by the New York Department of Health and Lederle Laboratories, Inc.

The germ is called pneumococcus Type 33. Hitherto scientists have recognized 32 types of pneumonia germs, following the classification by the late Dr. Georgia M. Cooper of the New York City Department of Health.

The newest one, Type 33, was isolated by Dr. Jesse G. M. Bullowa, of Harlem Hospital's pneumonia service, and was at first called the Wilder strain. Numerous specialists during the pneumonia season of 1937-1938 reported that they were encountering pneumonia in their patients which, though the germs seemed to be related to Type 9 pneumococci, did not respond to treatment with Type 9 pneumonia serum

treatment.

Serum for diagnosis and treatment of this type of pneumonia infection has been prepared by Lederle Laboratories, and reports since it has been in use show that it is a more frequent causative agent of pneumonia than some of the established higher types.

BELLADONNA GIVES HOPE TO VICTIMS OF ENCEPHALITIS

CINCINNATI—Hope for recovery of patients disabled by the tragic after-effects of an attack of encephalitis appears in the report of good results an American physician, Dr. Howard D. Fabing of this city, has had with a medical treatment imported from Bulgaria via Italy.

While the new medical treatment cannot be called a cure, 22 out of 23 totally incapacitated patients were helped by it, nine of them showing marked improvement, Dr. Fabing reported to the Ohio State Medical Association. The rigid muscles, mask-like faces and peculiar gait are the after-effects chiefly helped by the treatment. The patients feel better, but the mental symptoms are not always relieved.

The medicine used is a white wine extract of the Bulgarian belladonna plant. This medical treatment was first promulgated by a Bulgarian herbalist, Ivan Raeff, of Chipka. Clinics for giving this treatment were established throughout Italy by Queen Elena. More recently, English and American physicians have tried the treatment with good results.

SUPERIOR

Little Nelly told little Anita what she termed a "little fib."

Anita: A fib is the same as a story, and a story is the same as a lie.

Nelly: No, it's not.

Anita: Yes, it is, because my father said so, and my father is a professor at the university.

Nelly: I don't care if he is. My father is a real estate man and he knows more about lying than your father does.—*United Presbyterian*.

SULFANILAMIDE DERIVATIVES FOR FURUNCLES, CARBUNCLES AND ABSCESSSES

Beling and Abel used sulfamethylthiazole in 25 and sulfathiazole in 15 consecutive cases of staphylococcal infections; 13 of the cases were carbuncles, 12 furuncles and 15 abscesses. Staphylococci were cultured from the lesions of each patient and were recovered from the blood stream of 1. Thirty-eight of the patients were definitely improved after receiving a considerable quantity of the drug; 1 result was questionable because of the prolonged course of the disease and concomitant administration of staphylococcus vaccine. Furuncles were affected most readily and disappeared within four days, except in 2 instances; 1 had about ten furuncles and responded satisfactorily although eight days elapsed before the last one dis-

appeared and the other patient, the one who had received the vaccine, was not definitely improved. Response to thiazole therapy depends in part on the developmental stage of the lesion when the drug is commenced. The earlier furuncles responded about 25 per cent more slowly than well developed lesions but receded without formation of pus. The latter quickly soften, discharge their contents promptly and heal. No core forms and the discharge is liquid. The induration and redness around the lesion disappear rapidly. Carbuncles responded more slowly because of the extensive nature of the lesion but did so with relative rapidity and in essentially the same manner. The surrounding infiltrated areas became soft and the redness disappeared, while the drainage assumed the character described for furuncles. Any cores formed prior to treatment were soft and easily dislodged. Diabetes mellitus is not a contraindication to treatment. It may prolong the time required for the lesion to improve, but this is not always true as the carbuncle of one such patient responded in six days. If it is deemed necessary to excise a carbuncle, the authors advise giving sulfathiazole for twenty-four hours prior to excision, as they believe that this will tend to prevent spread of infection, the development of septicemia and residual local infection. Abscesses usually responded to treatment in from five to eight days, depending on their stage before treatment and on the presence of cellulitis. The authors state that, if staphylococcic cellulitis is treated before there is any tendency to localization, resolution may take place without formation of pus. If pus does form, the abscess will be insignificant. When an abscess has already begun to form, the time taken to clear up the cellulitis and the abscess together is usually several days longer. One case with cellulitis and abscesses cleared in twelve days, 1 with multiple intractable abscesses throughout both breasts cleared up within five days and in another case there was no effect from sulfamethylthiazole. In the last mentioned case there were honeycombed abscesses throughout the scalp and subaponeurotic region following an injury to the scalp and extensive cellulitis; also diabetes was present. Chemotherapy alone is not sufficient treatment for abscesses or any other collection of pus that is accessible. These various lesions should be handled in the customary manner with the addition of thiazole medication by a suitable route.

TUBERCULOSIS PROTECTION FROM BCG VACCINE

Aronson and his collaborators vaccinated from February 1936 to February 1938 1,565 Indian children from 1 to 19 years of age with BCG vaccine. During the same period 1,460 persons of the same age and sex, living in the same area and under the same conditions, were inoculated with 0.1 cc. of sterile physiologic solution of sodium chloride and served as controls. Before their inclusion in this study both groups failed to react to intracutaneous injection of 0.00002 and 0.005 mg. of purified protein derivative. Roent-

genograms of the chests of most members of the two groups were taken either before or shortly after vaccination and at yearly intervals thereafter; also the members of both groups were retested with the same preparation of purified protein derivative. These Indians live under widely different climatic conditions (Arizona, Wyoming, North Dakota, South Dakota and Alaska) and are for the most part indigenous to their present locality. While their physical characteristics, dietary habits and social and economic patterns vary widely, their economic level is almost uniformly low. The BCG vaccine was injected intracutaneously over the deltoid region. It produced no untoward local or general reaction, and no instance of abscess formation or ulceration of the regional lymph nodes was noted. The local tissue response varied in different individuals. The relationship of the character of the local tissue reaction to resistance to tuberculosis is being studied. One year after vaccination, 93.3 per cent of 1,481 persons reacted to the intracutaneous injection of either 0.00002 or 0.005 mg. of purified protein derivative. Two years after vaccination 93.3 per cent of 1,446 persons retested were tuberculin positive and in three years 95.3 per cent of 619 persons reacted positively. The antigenicity appeared to be influenced by the rate of growth of the culture used in preparing the vaccine but not by the age of the culture or the number of generations that the culture had been grown on bile-free medium. Because of the marked variation in the results obtained by different investigators, the authors suggest that the preparation of BCG vaccine and the determination of the resulting allergy be made uniform. The BCG vaccine that they used was prepared in a field laboratory and was used within three days.

THE WRONG WORDS

Every writer should paste on his desk blotter this pointed memo from the editor of a newspaper to his staff:

We do not commence, we begin. We do not purchase, we buy. Not all women are ladies, but all ladies are women. We do not reside in residences, we live in homes. We do not retire, we go to bed. Our priests, ministers and rabbis are not divines. And the first reporter who writes of a body landing "with a dull, sickening thud," will land with a dull, sickening thud on the street, with hat in one hand and pay envelope in the other.—Edward Frank Allen
—*How to Write and Speak Effective English.*

DANGEROUS DAN M'Cröbe

A bunch of germs were hitting it up
In the bronchial saloon;
Two bugs in the edge of the larynx
Were jazzing a ragtime tune.
Back in the teeth, in a solo game,
Sat dangerous Ack-Kerchoo;
And watching his pulse was his light of love,
The lady who's known as Flu.—Exch.

TERMINAL CARDIAC MECHANISM IN CORONARY ARTERY DISEASE

Goodrich and Needles cite 2 instances in which they observed on electrocardiographic study the terminal cardiac mechanism of sudden death from coronary artery disease. One of the deaths was shown at necropsy to have been caused by marked coronary artery sclerosis (the patient had had angina pectoris). The other was the result of infarction of the anterior wall of the heart; it occurred on the tenth day after coronary occlusion. The first case supports the contention of Grieco and Schwartz that cardiac standstill should occur as frequently as ventricular fibrillation, and that if more records could be obtained additional instances of cardiac standstill would probably be discovered.

Coming Meetings

- March 10 — Adams County Medical society — Quincy, Illinois — Dr. H. E. Schmitz — "Uterine Bleeding & The Human Pituitary Gland."
- March 11 — Bureau County — St. Margaret's Hospital, Spring Valley, Ill. — 6:30 P. M. — Dr. Adrien Verbrugghen, "Neurology for the General Practitioner."
- March 11 — Effingham County — Benwood Hotel, Effingham, Ill.—6:30 P. M. Dr. Harlan English — "What Can Modern Urology Offer."
- March 11 — Tazewell County — Illinois Hotel, Pekin, Ill. — 6:30 P. M. — Dr. Stuart Wood — Diagnosis of Lower Back Pain.
- March 12 — Coles-Cumberland County — Mattoon, Ill. — Dr. Wm. J. Morginson — "Dermatology." Dr. James Graham — "Varicose Veins and Ulcers."
- March 12 — Clinton County — Pneumonia Program — 12:30 P. M. — Dr. Reno Rosi, Dr. Wayne Fox — Truesdail Hotel — Carlyle, Ill.
- March 12 — McDonough County — Macomb, Illinois — LaMoine Hotel — 6:30 P. M.
- March 13 — Morgan County — Colonial Inn — Jacksonville, Illinois, 6:30 P. M. — Dr. E. D. Allen — "Gynecological, Problems of the Adolescent Girl." Dr. Gustav F. Weinfeld — "Emotional Growth Problems of the Adolescent."
- March 14 — Will-Grundy County — Louis Joliet Hotel — 12:30 Noon — Dr. Charles Drueck — "Cancer of the Rectum."
- March 14 — Jersey-Greene County — Colonial Hotel — Jerseyville, Ill.
- March 17 — Bond County — Pneumonia Program — Dr. Reno Rosi.
- March 18 — Rock Island County — Moline Lutheran Hospital — Moline, Ill. 8:00 P. M. — Dr. Joseph L. Baer — "Forceps Delivery, the Indications, Contraindications and Technique."
- March 18 — Macon County — Pneumonia Program.
- March 19 — Tri-County Medical Society — Hunt's Cafe, Metropolis, Ill. 6:30 P. M. — Dr. A. E. Kanter—"Management of Obstetric Hemorrhages."
- March 20 — Stephenson County — Freeport, Illinois, Dr. Frank C. Valdez — "Gastro-Enterology."
- March 20 — Springfield Medical Club — 5:30 P. M. Cocktail Party — 6:30 Dinner — 8:00 P. M. Scientific Program — Dr. H. W. Orr — "Newer Methods In The Management of Compound Fractures."
- March 21 — Will-Grundy County — Louis Joliet Hotel, Joliet, Ill. 12:00 Noon — Dr. Harvey S. Allen — "Infections of the Hand."
- March 26 — Jefferson-Hamilton County — Emmer-son Hotel — Mt. Vernon, Ill. Dr. Paul S. Rhoads — "Pneumonia."
- March 27 — LaSalle County — Starved Rock Lodge — Starved Rock, Ill. — 6:30 — Dr. G. Henry Mundt — "Diseases of the Ear." Dr. Rollo K. Packard — "Diagnosis And Treatment of Abdominal Lesions."
- March 27 — Edgar County — Paris Hospital — Paris, Ill. — 7:00 P. M. — Dr. Eugene Cary — "Problems of Forceps Delivery." (manikin demonstration.)
- April 1 — Vermilion County — Hotel Wolford — Danville, Illinois — 6:30 P. M. — Dr. Joseph Beck — Ear, Nose and Throat Program.
- April 3 — Post-Graduate Conference — Carbondale, Illinois — 11:00 A. M.
- April 4 — Madison County — Collinsville — 2:00 P. M. Dr. W. C. Scrivner — "Management of Placenta Previa and Premature Detachment of the Placenta."
- April 4 — Will-Grundy County — Louis Joliet Hotel, Joliet, Illinois — 12:00 Noon — Dr. M. Reese Guttman — "Diagnosis and Treatment of Middle Ear Infections."
- April 8 — Rock Island County — Moline City Hospital — Moline, Illinois — 8:00 P. M. — Dr. Frederick H. Falls, "Obstetrical Operations."
- April 9 — Post-Graduate Conference — Joliet — Louis Joliet Hotel — 12:00
- April 10 — Effingham County — Benwood Hotel, Effingham, Illinois — 6:30 P. M. — Movie by J. B. DeLee — "Management of Eclampsia at Home" — Dr. H. Close Hesseltine — "The Place of the New Chemotherapeutic Drugs, Before, During and After Gestation." — Dr. Archibald Hoyne — "Incidence of Contagious Diseases and More Frequent Complications." — Dr. Bert I. Beverly — "The Management of Behavior Problems in Children."
- April 11 — Will-Grundy County — Louis Joliet Hotel, Joliet — 12:00 Noon — Dr. John R. Neal — "Medical Legislation."
- April 11 — Jersey-Greene County — Carrollton, Illinois — 6:30 P. M. — Dr. Wm. J. Morginson — "Diagnosis and Treatment of Common Skin Diseases."
- April 24 — Edgar County — Paris Hospital, Paris, Illinois — 7:00 P. M. Dr. C. A. Aldrich — Treatment of Nephritis in Children." — Post-Graduate Conference — Galesburg, Illinois.

Marriages

ALEXANDER R. FAIRSHTER, Brookport, Ill., to Miss Jeanne Gormon of Philadelphia, in Philadelphia, February 4, 1941.

CLARENCE F. KELLY JR., Duquoin, Ill., to Miss Lillian Masters of Butler in October 1940.

HAROLD S. FRIEDMAN to DR. MARY ZELDES, both of Chicago, February 1.

Personals

Dr. Archibald L. Hoyne discussed "Importance of Observation in Diagnosis" before the West Side Branch on January 16.

Dr. George Crile Jr., Cleveland, discussed jaundice before the Sangamon County Medical Society in Springfield February 6.

Dr. Herbert E. Schmitz, Chicago, addressed the Winnebago County Medical Society at Rockford, February 11, on "Diagnosis and Treatment of Cancer of the Uterus."

The North Side Branch was addressed, February 6, by Dr. Russell L. Cecil, New York, on "Recent Advances in the Chemotherapy of Pneumonia."

Dr. Maurice I. Kaplan addressed the Douglas Park Branch, January 21, on "Radiation Therapy of Acute Infection with Special Reference to Osteomyelitis of the Digits."

A surgical symposium on "when not to operate" was presented before the Calumet Branch January 17, By Drs. Harry E. Mock, Lindon Seed and Channing W. Barrett.

The McLean County Medical Society was addressed at Bloomington, February 11, by Dr. Harold O. Jones, Chicago on "Tubal Pregnancy."

The Northwest Branch was addressed by Drs. Francis E. Senear and Robert W. Keeton, February 14, on "Dermatology in Internal Medicine" and "Office Management of Diabetes" respectively.

Lieut. Marcus D. Burnstine, Columbus, Ohio, medical reserve officer, has been named physician in charge of the health service station for civilian employees at the Rock Island Arsenal, succeeding Dr. Roderick G. St. Pierre, Rock Island, who went to Portland, Ore.

Dr. James Herrick delivered the fifth Chris-

tian Fenger Lecture of the Institute of Medicine of Chicago and the Chicago Pathological Society at the Palmer House, February 10. His subject was "Christian Fenger as I Knew Him, 1885-1902: A Study in Personality."

Dr. Alexander Brunschwig, associate professor of surgery and roentgenology, University of Chicago, the School of Medicine, delivered a public lecture at the Chicago Woman's Club February 12 on "The Story of Cancer Research." The talk was given under auspices of the cancer research committee of the Chicago Woman's Club and the Chicago Medical Society.

The Jackson Park Branch of the Chicago Medical Society was addressed, January 16, by Drs. Ludvig Hektoen on "The Federal Cancer Program" and Bowman C. Crowell, "Influence of Cancer Clinics in Cancer Control."

Dr. Jacob P. Greenhill has been appointed attending physician (office service in obstetrics and gynecology) at Michael Reese Hospital. Promotions on the staff include those of Drs. John S. Coulter to senior attending physician in physical therapy and William H. G. Logan to senior attending surgeon in oral surgery.

Dr. John Chornyak, psychiatrist for the Juvenile Court of Pittsburgh, has been chosen medical director of the Illinois Society for Mental Hygiene. He fills the vacancy that occurred in April 1940 when Dr. Conrad S. Sommer became superintendent of the division of mental hospitals in the Illinois Department of Public Welfare.

Dr. H. Close Hesseltine was invited to talk on "The Place of the New Chemotherapeutic Drugs in Obstetrics" before the Rock Island County Medical Society on February 18.

Dr. James H. Hutton was invited to talk on "Recent Progress in Endocrinology" before the Knox County Medical Society on February 18.

Dr. Herbert E. Schmitz was invited to address the Winnebago County Medical Society at Rockford on February 11, subject "Diagnosis and Treatment of Cancer of the Uterus."

Dr. Maurice H. Wald gave a paper on "Hypertension and Its Treatment" before the Effingham County Medical Society on February 11.

Dr. Robert E. Black gave a talk on "Heart Disease in Children" before the Kankakee County Medical Society at Kankakee on February 11.

E. J. Berkheiser was invited to give a paper on

orthopedics before the Will-Grundy County Medical Society at Joliet on February 14.

Dr. Philip Thorek was invited to address the Lee County Medical Society February 20 on "Differential Diagnosis of Acute Abdomen."

Drs. Clifford J. Barborka and David E. Markson addressed the Henry County Medical Society at Kewanee on February 20. Subjects: "Medical Management of Gall Bladder Disease" and "Diagnosis and Treatment of Arthritis."

Dr. Robert S. Berghoff was invited to give a talk on "Coronary Disease" before the LaPorte County Medical Society at LaPorte, Indiana, on February 20.

Dr. Mortimer Diamond was invited to talk on "The Practical Significance of Gross Rectal Bleeding" before the Will-Grundy County Medical Society on February 21.

Dr. J. P. Greenhill, on January 28, read a paper before the Rock County Medical Society in Beloit, Wisconsin, on "Office Gynecology." And on February 12, read a paper before the Kane County Medical Society at Elgin, Illinois, on "Recent Advances in Gynecologic Endocrinology."

Dr. Irving Stein was invited to address the Williamson County Medical Society on February 4.

Dr. Edward Dudley Allen gave a talk on "Endometriosis" before the Will-Grundy County Medical Society on February 7.

Dr. William J. Pickett was invited to talk on "Ruptured Appendix" before the Madison County Medical Society on February 7.

On February 28, Doctor Edmund Jacobson delivered an address before the Young Women's Christian Association in Boston on the subject, Relaxation and Physical Education. A second address followed in the evening.

On March 5, Doctor Edmund Jacobson spoke before the Faculty and student body of Wells College, New York, on the subject, Relaxation and the College Student.

Dr. Paul C. Bucy has been appointed Associate Professor of Neurology and Neurological Surgery at the University of Illinois College of Medicine, Chicago. Dr. Bucy succeeded Dr. Percival Bailey as chief neurological surgeon at the University of Chicago when Dr. Bailey joined the staff of the University of Illinois in September, 1939.

Both men are now associated with Dr. Eric Oldberg, Professor and Head of the Department of Neurology and Neurological Surgery, in the new Neuropsychiatric Institute which has just been completed on the Chicago campus of the University of Illinois.

Mrs. Arthur I. Edison has been appointed Commander for Illinois of the Women's Field Army of the American Society for the Control of Cancer, succeeding Mrs. George Hanley Nipert.

Mrs. Edison is president of the Woman's Auxiliary to the North Side Branch of the Chicago Medical Society; Vice-President of the Woman's Auxiliary to the Illinois State Medical Society; a member of the Executive Board of the Lower North Community Council; Past Chairman of the Legislative Committee of the Women's Auxiliary to the Cook County Medical Society, and Past Chairman of the Hygeia Committee of the State and County Medical Auxiliaries.

News Notes

—Prof. Henrik Dam of the Biochemical Institute, University of Copenhagen, delivered the Charles Sumner Bacon Lectures for 1940-1941 at the University of Illinois College of Medicine. Professor Dam spoke February 12 at 1 p. m. on "Vitamin K, Its General Significance in Biochemistry," and February 12 at 4 p. m. on "Vitamin K, Its Role in Human Pathology and Its Application in Therapeutics."

—Lieut. Col. Charles G. Hutter, Medical Corps, U. S. Army, liaison officer of the Office of the Surgeon General to the American Medical Association, was the principal speaker and guest of honor at the annual session of the Chicago Heart Association in Abbott Hall February 12. Colonel Hutter's subject was "Heart Disease and National Defense."

—The Clara A. Abbott trust has given \$40,000 to the Evanston Hospital, supplementing an earlier donation of \$250,000. The money is being used for construction of the Abbott Memorial Building at the hospital, which will house clinical and research laboratories, an auditorium for medical teaching and facilities for outpatient diagnostic tests. Mrs. Abbott was the widow of Dr. Wallace C. Abbott, founder of the Abbott Laboratories.

—The midwinter meeting of the South Side Medical Assembly was held on February 19 with clinics in the morning at various hospitals and afternoon and evening sessions at the Shoreland Hotel. Symposia made up the afternoon program, and after dinner Dr. James R. Bloss, Huntington, W. Va., spoke on "Sterility Studies in the Female." The assembly is an organization consisting of all the south side branches of the Chicago Medical Society.

—Reports from the state department of health indicate that an outbreak of measles in Illinois is reaching epidemic proportions. During the first five weeks of 1941, 5,512 cases were reported, more than four times the number of cases on record for the entire year of 1939 and more than half the total number of cases recorded for 1940. During the week ended February 3 the total for the state numbered 1,339 as against 30 for the corresponding week last year. The largest number of cases has been reported from the north central section of the state.

—The dedication of a new tumor clinic at Henry Hospital took place January 19 with Mr. Frank A. Miller, president of the board of directors of the hospital, presiding. The speakers included Drs. Joe Vincent Meigs, Boston; Bowman C. Crowell, John A. Graham and Charles B. Puestow. The new clinic has special quarters for the examination, diagnosis and treatment of patients suffering from neoplastic diseases. High voltage roentgen therapy equipment has been installed in a lead lined room, and radium in the form of needles and tubes is also available. Private and charity patients will be accepted for diagnosis and treatment. Special tumor conferences will be held at the hospital on the third Wednesday of each month. Dr. Henry L. Jaffe has been made director of the new clinic.

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Deaths

WILLIAM ROBERT ABBOTT, Chicago; Northwestern University Medical School, Chicago, 1911; a Fellow,

A.M.A.; fellow of the American College of Surgeons; on the staff of the Englewood Hospital; aged 55; died, Dec. 21, 1940, of coronary occlusion.

HAIM SOLOMON BOBROFF, Chicago; University of Moscow Faculty of Medicine, Russia, 1916; age 49, died, Dec. 16, 1940, of cyanide poisoning, self administered.

WILLIAM F. CATHCART, Chicago; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1906; aged 68; died in December 1940 of arteriosclerosis.

JAMES FRANKLIN COOPER, Edinburg, Ill.; Barnes Medical College, St. Louis, 1901; served during the World War; aged 75; died, Dec. 4, 1940, in the Decatur and Macon County Hospital, Decatur, of cerebral hemorrhage.

HERMAN C. W. GRESENS, Chicago; Rush Medical College, Chicago, 1897; a Fellow A.M.A.; aged 71; died, Nov. 28, 1940, of heart disease.

FRANCIS PARRIER HORAN, Evanston, Ill.; University of Pennsylvania Department of Medicine, Philadelphia, 1907; a Fellow, A.M.A.; served during the World War; on the staff of St. Francis Hospital; aged 60; died, Dec. 23, 1940, of coronary thrombosis.

FRANCES MAY GAGE HULBERT, Chicago; Hahnemann Medical College of the Pacific, San Francisco, 1895; aged 75; died, Dec. 17, 1940, of injuries received when struck by an automobile when crossing the street.

JOHN JOSEPH KOWARSKAS, Chicago; Chicago Medical School, 1927; member of the Illinois State Medical Society; aged 42; died, Dec. 14, 1940, in the Holy Cross Hospital of diverticulitis.

EDWIN J. KUH, Chicago; Universität Heidelberg Medizinische Fakultät, Baden, Germany, 1882; a Fellow, A.M.A.; an Affiliate Fellow of the American Medical Association; aged 82; died, Dec. 31, 1940, of heart disease.

WILLIAM EDWARD MCGUIRE, Cottonwood, Ill.; Barnes Medical College, St. Louis, 1899; member of the Illinois State Medical Society; for many years county coroner; aged 67; died, Dec. 10, 1940, of heart disease.

WILLIAM R. ROSS, Mount Vernon, Ill.; College of Physicians and Surgeons, Baltimore, 1880; member of the Illinois State Medical Society; aged 86; died, Dec. 19, 1940, of heart disease.

CARLES M. SEATON, Morrisonville, Ill.; Illinois Medical College, Chicago, 1902; member of the Illinois State Medical Society; aged 64; died, Dec. 4, 1940, in St. Vincent Hospital, Taylorville, of angina pectoris.

CLYDE WARE SWANK, Chicago; Rush Medical College, Chicago, 1890; aged 76; died, Dec. 6, 1940, of carcinoma.

CLAUDE MELNOTTE WADE, Chicago; Louisville (Ky.) National Medical College, 1891; aged 77; died, Dec. 26, 1940, of cerebral hemorrhage.

LEE A. WIXSOM, Chicago; Chicago Medical School, 1918; a Fellow, A.M.A.; aged 48; died, Dec. 9, 1940, in the Englewood Hospital of septicemia, pyemia and diabetes mellitus.

1930

Tisdall, F. F., Drake, T. G. H., and Brown, A.: A new cereal mixture containing vitamins and mineral elements, *Am. J. Dis. Child.* 40:791-799, Oct. 1930.

1931

Tisdall, F. F.: Dietary factors and health, *Soc. Tr., Am. J. Dis. Child.* 42:1490, Dec. 1931.

1932

Summerfeldt, P.: The value of an increased supply of vitamin B₁ and iron in the diet of children, *Am. J. Dis. Child.* 43:284-290, Feb. 1932.

Morse, J. L.: Pads and fancies in present day pediatrics, *Pennsylvania M. J.* 35:280-285, Feb. 1932.

Henricke, S. G.: The vitamin B complex: Its role in infant feeding in the light of our present knowledge, *Northwest Med.* 31:165-169, April 1932.

Langhorst, H. F.: Vitamins: Their role in the prevention and treatment of disease, *M. J. & Rec.* 135:326-329, April 6, 1932.

Crimm, P. D.: Dietary of Childhood Tuberculosis: Cereal as a source of added mineral and vitamin elements; preliminary report, *J. Indiana M. A.* 25:205-206, May 1932.

Troutt, L.: Quality studies of therapeutic diets: I. The ulcer diet; a committee report, *J. Am. Dietet. A.* 8:25-32, May 1932.

Summerfeldt, P., Tisdall, F. F., and Brown, A.: The curative effects of cereals and biscuits on experimental anaemias, *Canad. M. A. J.* 26:666-669, June 1932.

Sneed, W.: Ununited and delayed union of fractures, *Kentucky M. J.* 30:363-370, July 1932.

Silverman, A. C.: Celiac disease, *New York State J. Med.* 32:1055-1061, Sept. 15, 1932.

Rice, C. V.: Sauerkraut juice for the acidification of evaporated milk in infant feeding, *Arch. Pediat.* 51:390-395, June 1934.

Eder, H. L.: Iron therapy: A routine procedure during infancy, *Arch. Pediat.* 51:701-713, Nov. 1934.

Lynch, H. D.: Fundamentals of infant feeding, *J. Indiana M. A.* 27:571-574, Dec. 1934.

Chaney, M. S., and Ahlborn, M.: Nutrition, Houghton Mifflin Co., Boston, 1934, p. 323.

1935

Bailey, C. W.: Anemia in infants and young children, *J. South Carolina M. A.* 31:54-58, March 1935.

Kugelmass, I. N.: The recent advances in treatment of nutritional disturbances in infancy and childhood, *M. Comment* 17:5-13, March 1, 1935.

Ross, J. R., and Summerfeldt, P.: Value of increased supply of vitamin B₁ and iron in the diet of children: Paper II, *Am. J. Dis. Child.* 49:1185-1188, May 1935.

von Meysenbug, L.: Breast feeding with especial reference to some of its problems, *New Orleans M. & S. J.* 87:738-743, May 1935.

Tarr, E. M., and McNeile, O.: Relation of vitamin B deficiency to metabolic disturbances during pregnancy and lactation, *Am. J. Obst. & Gynec.* 29:811-818, June 1935.

Blatt, M. L., and Schapiro, I. E.: Influence of a special cereal mixture on infant development, *Am. J. Dis. Child.* 50:324-336, Aug. 1935.

Coward, N. B.: Infant feeding, *Nova Scotia M. Bull.* 14:525-532, Oct. 1935.

Tisdall, F. F.: Inadequacy of present dietary standards, *Tr. Sect. Pediat., A.M.A.*, 1935: *Canad. M. A. J.* 33:624-628, Dec. 1935.

Marriott, W. McK.: Infant Nutrition, second edition, C. V. Mosby Co., St. Louis, 1935, p. 202.

Smith, C. H.: Prevention and treatment of nutritional anemia in infancy, *Preventive Med.* 7:115-124, Aug. 1937.

Saxl, N. T.: Pediatrics, in *Dietetics for the Clinician*, edited by M. A. Bridges, third edition, Lea & Febiger, Philadelphia, 1937, pp. 637-639.

Boyd, J. D.: Nutrition of the Infant and Child, National Medical Book Co., Inc., New York, 1937, p. 110.

Brennemann, J.: Practice of Pediatrics, W. F. Prior Co., Inc., Hagerstown, Md., 1937, Vol. 1, Ch. 25, p. 19.

Griffith, J. P. C., and Mitchell, A. G.: The Diseases of Infants and Children, second edition, W. B. Saunders Co., Philadelphia, 1937, pp. 106, 111.

Saxl, N. T.: Pediatric Dietetics, Lea & Febiger, Philadelphia, 1937, pp. 131-133.

1938

Hoffman, S. J., Greenhill, J. P., and Lundeen, E. C.: A premature infant weighing 735 grams and surviving, *J.A.M.A.* 110:283-285, Jan. 22, 1938.

Krasnow, F.: Nutritional influence on teeth, *Am. J. Pub. Health* 28:325-333, March 1938.

Ratner, B.: Round Table discussion on asthma and hay fever in children, *J. Pediat.* 12:399-413, March 1938.

Ratner, B.: Panel discussion on the role of allergy in pediatric practice, *J. Pediat.* 13:582-604, Oct. 1938.

Snelling, C. E.: Nutritional anaemia, *Bull. Acad. Med. Toronto* 12:7-10, Oct. 1938.

Dauphinee, J. A.: The iron requirement in normal nutrition, *Canad. M.A.J.* 39:483-486, Nov. 1938.

Summerfeldt, P., and Ross, J. R.: Value of an increased supply of vitamin B₁ and iron

SCIENTIFIC BACKGROUND

Mead's Cereal was introduced in 1930, and Pablum in 1932, by Mead Johnson & Company. Since then, the growing literature indicates early recognition and continued acceptance of these products and the important pioneer principles they represent.

von Meysenbug, L.: Infant feeding with especial reference to some of its problems during the first year, *Texas State J. Med.* 28:543-547, Dec. 1932.

1933

Wampler, F. J., and Forbes, J. C.: Calcium and phosphorus metabolism in a case of celiac disease, *South. M. J.* 26:555-558, June 1933.

Brown, A., and Tisdall, F. F.: The role of minerals and vitamins in growth and resistance to infection, *Brit. M. J.* 1:55-57, Jan. 14, 1933; Effect of vitamins and the inorganic elements on growth and resistance to disease in children, *Ann. Int. Med.* 7:342-352, Sept. 1933.

Crimm, P. D., Raphael, I. J., and Schnute, L. F.: Diet of tuberculous and non-tuberculous children: Effect of increased supply of vitamin B₆ concentrate and minerals, *Am. J. Dis. Child.* 46:751-756, Oct. 1933.

Smith, A. D.: Consideration of various infants' foods, *Pacific Coast J. Homeop.* 44:463-465, Sept.-Dec. 1933.

1934

Somers, R., Rotton, G. C., and Rowntree, J. I.: Possibilities of improving dental structures, *Soc. Tr., Bull. King Co. M. Soc.* 13:6, Jan. 15, 1934.

Blatt, M. L.: Development of infants on a diet of a special cereal mixture, *Soc. Tr., Am. J. Dis. Child.* 47:918, April 1934.

Rice, C. V.: Anemia of infancy and early childhood, *J. Oklahoma M. A.* 27:125-129, April 1934.

Hawk, W. A.: A few of the commoner feeding problems in infancy, *Univ. Toronto M. J.* 11:218-229, May 1934.

Ross, J. R., and Burrill, L. M.: The effect of cooking on the digestibility of cereals, *J. Pediat.* 4:654-659, May 1934.

Summerfeldt, P.: Iron and its availability in foods, *Tr. Sect. Pediat., A.M.A.* 1935, pp. 214-220.

1936

Dafoe, A. R.: Further history of the care and feeding of the Dionne quintuplets, *Canad. M. A. J.* 34:26-32, Jan. 1936.

Conn, L. C., Vant, J. R., and Malone, M. M.: Some aspects of maternal nutrition, *Surg., Gynec. & Obst.* 62:377-383, Feb. 15, 1936.

Ross, J. R., and Summerfeldt, P.: Haemoglobin of normal children and certain factors influencing its formation, *Canad. M. A. J.* 34:155-158, Feb. 1936.

Smyth, P. S.: Allergic diseases, *J. Pediat.* 8:500-515, April 1936.

Lemmon, J. R.: Problems of the crying infant, *Southwestern Med.* 20:248-250, July 1936.

Rice, C. V.: The success of treating celiac disease from a standpoint of vitamin deficiency, *Arch. Pediat.* 53:626-629, Sept. 1936.

Smith, C. H.: Management of nutritional anemia in infancy, *M. Clin. North America* 20:933-950, Nov. 1936.

Strong, R. A., editor: Nutritional anemia of infants, *Orleans Parish M. Soc. Bull.*, pp. 6-9, Nov. 9, 1936.

Jeans, P. C.: Specific factors in nutrition, Round Table discussion, *J. Pediat.* 9:693-698, Nov. 1936.

Young, J. G.: Meeting the requirements for proper nutrition in infancy, *Texas State J. Med.* 32:531-533, Dec. 1936.

1937

Stearns, G., and Stinger, D.: Iron retention in infancy, *J. Nutrition* 13:127-141, Feb. 1937.

Strong, R. A.: Nutritional anemia, *Mississippi Doctor* 15:13-16, Aug. 1937.

in the diet of children, Paper III, *Am. J. Dis. Child.* 56:985-988, Nov. 1938.

Tisdall, F. F., and Drake, T. G. H.: The utilization of calcium, *J. Nutrition* 16:613-620, Dec. 1938.

Drake, T. G. H.: Introduction of solid foods into the diets of children, *Canad. M. A. J.* 39:578-580, Dec. 1938.

1939

Strong, R. A.: The most frequent causes of vomiting in infancy, *Texas State J. Med.* 34:665-676, Feb. 1939.

Ratner, B., and Gruel, H. L.: Anaphylactogenic properties of certain cereal foods and breadstuffs: Allergic denaturation by heat, *Am. J. Dis. Child.* 57:739-758, April 1939.

Monypenny, D.: Early introduction of solid foods in the infant diet, *Soc. Tr., Am. J. Dis. Child.* 58:1144-1145, Nov. 1939.

Brown, A., and Tisdall, F. F.: Common Procedures in the Practice of Paediatrics, third edition, McClelland & Stewart, Ltd., Toronto, 1939, pp. 77-79.

1940

Monypenny, D.: The early introduction of solid foods in the infant diet, *Canad. M. A. J.* 42:137-140, Feb. 1940.

Ratner, B.: Round Table discussion on food allergy, *J. Pediat.* 16:653-672, May 1940.

Rosenbaum, I., Jr.: The management of the allergic child, *Kentucky M. J.* 38:199-203, May 1940.

Davidson, W. C.: The Compleat Pediatrician, third edition, Duke University Press, Durham, N. C., 1940, No. 216.

Kugelmass, I. N.: The Newer Nutrition in Pediatric Practice, J. B. Lippincott Co., Philadelphia, 1940, p. 372.

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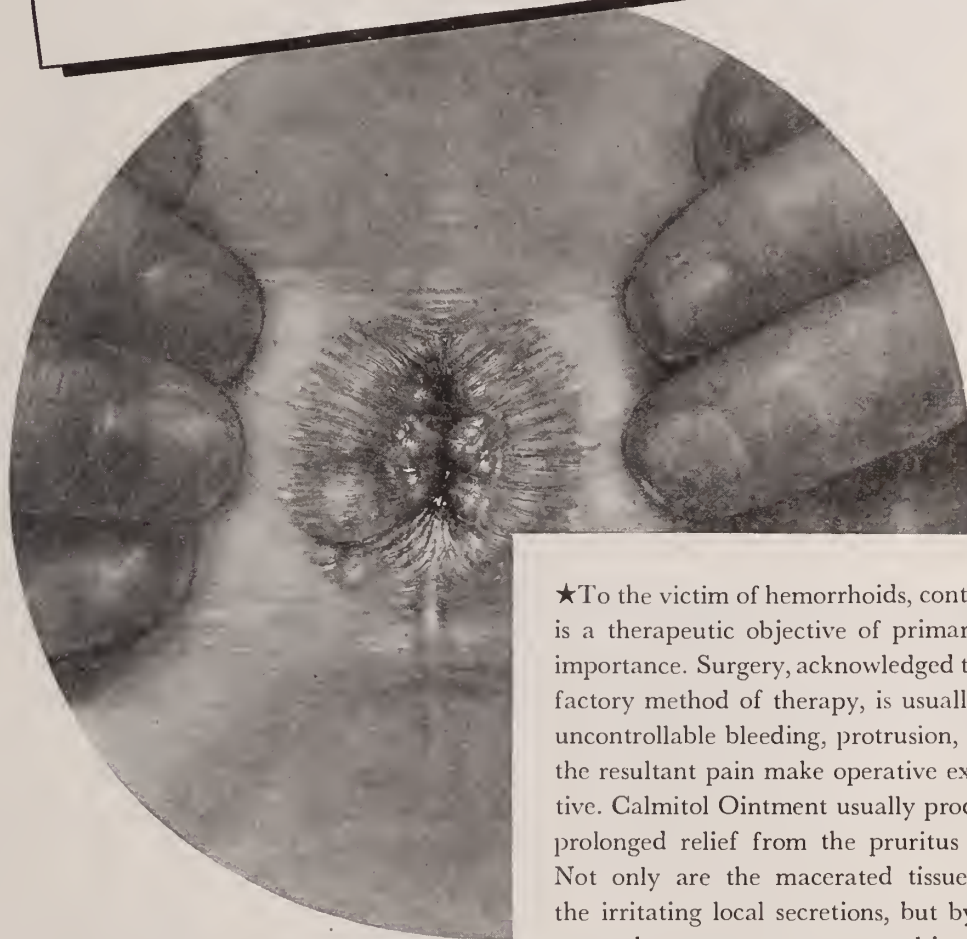
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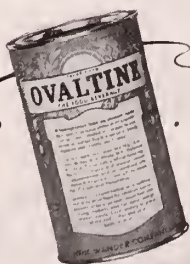
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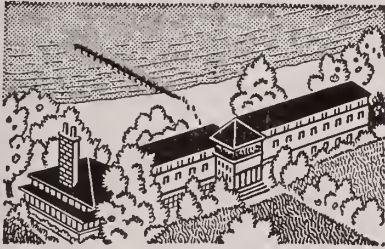


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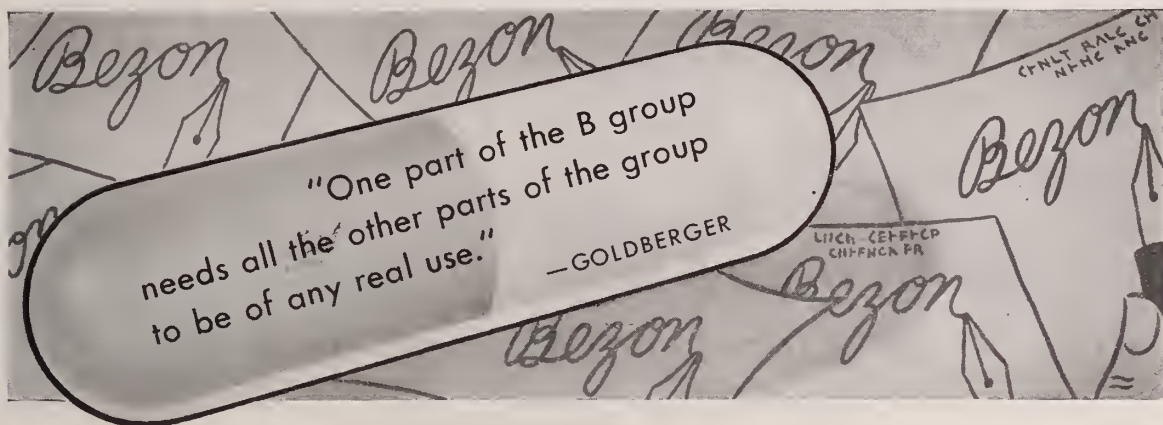


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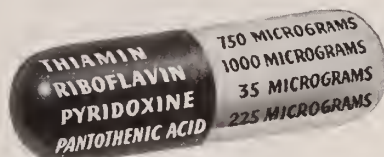
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An application for compensation filed by a nurse alleging that she had contracted pulmonary tuberculosis while employed in the tuberculosis department of a hospital was recently allowed by the Ohio State Industrial commission on the ground that the claimant's disability was the result of compensable occupational disease contracted in the course of her employment. Ed. Ohio State Med. Jour., Nov. 1940.

Abrupt climatic changes may bring to the fore latent disease such as tuberculosis, arthritis, heart disease and respiratory infections. Such changes also tend to lower general resistance to acute infections. Charles Singer, M.D., Jour. Amer. Med. Assn., Oct. 26, 1940.

The need of national defense requires a strengthening and broadening of the entire industrial health program all along the line from private industry to local, state and federal jurisdictions. In this significant period of rearmament during which our chief defense will be our industrial skill, let us be sure that we place first on our list the health and safety of our industrial workers. L. D. Bristol, M.D., Jour. Amer. Med. Assn., Oct. 12, 1940.

Prenatal examinations should include a chest X-ray. In a study of 2,834 prenatal patients, 4% were found to have evidence of healed tuberculosis of which the patients were unaware. Harvey J. Perlberg, M.D., Amer. Rev. of Tuber., Feb. 1940.



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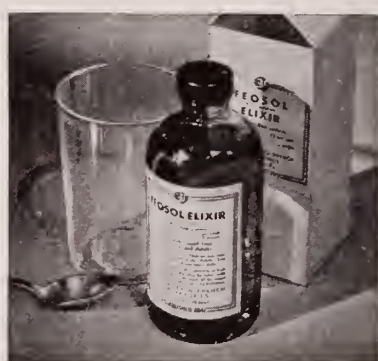
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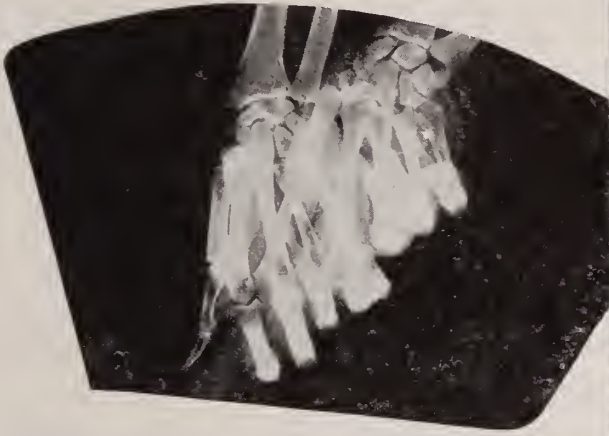


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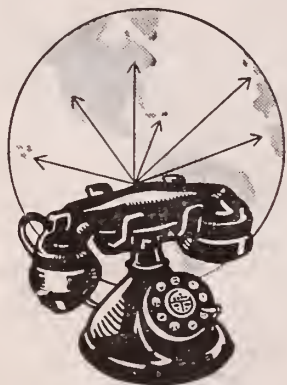
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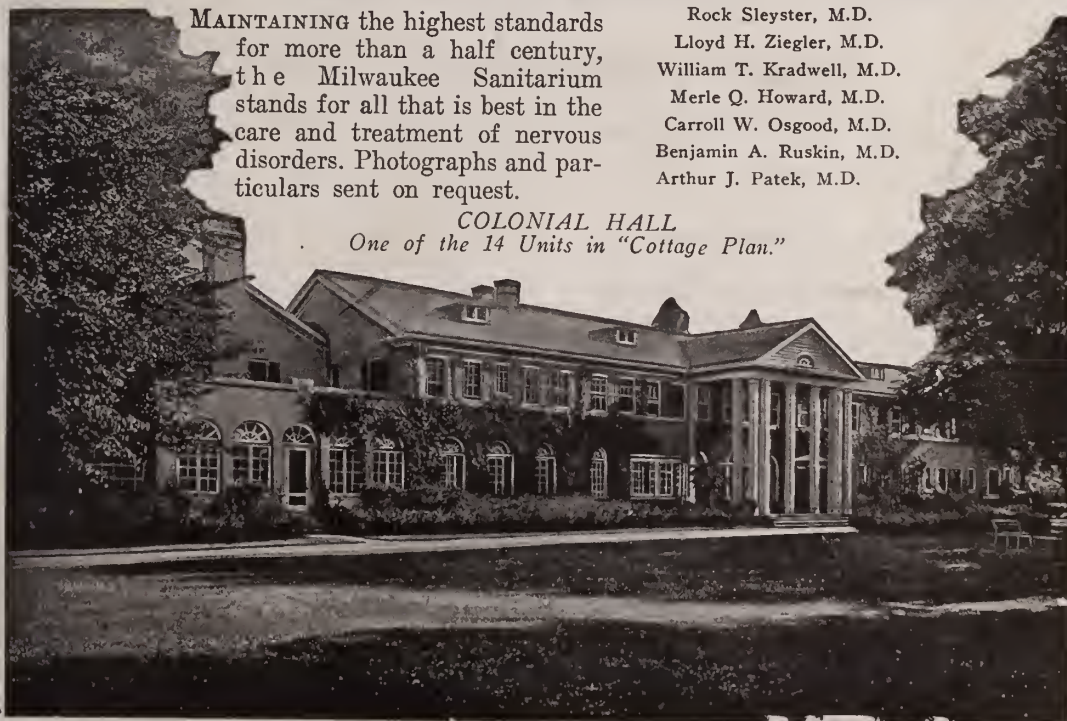
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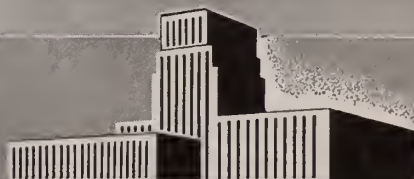
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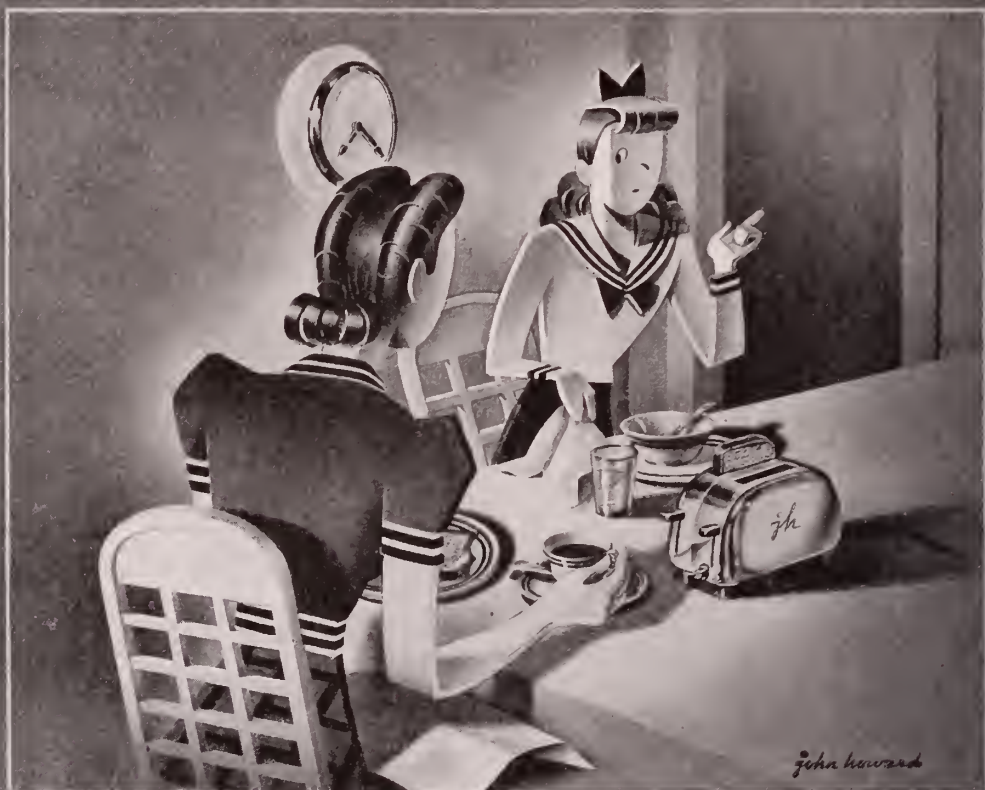
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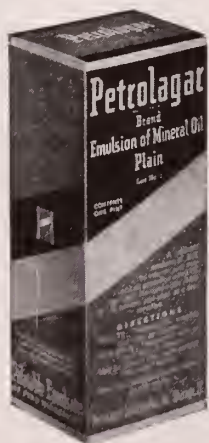
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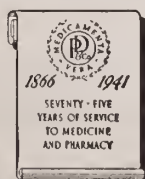


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● 20 calories to the ounce, but more important, the nutritional value of S-M-A is that of a complete well-balanced food. When prepared as above, each quart provides:

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Maltose	18
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(Karo—Blue Label)	

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1 teaspoon	20 cal.
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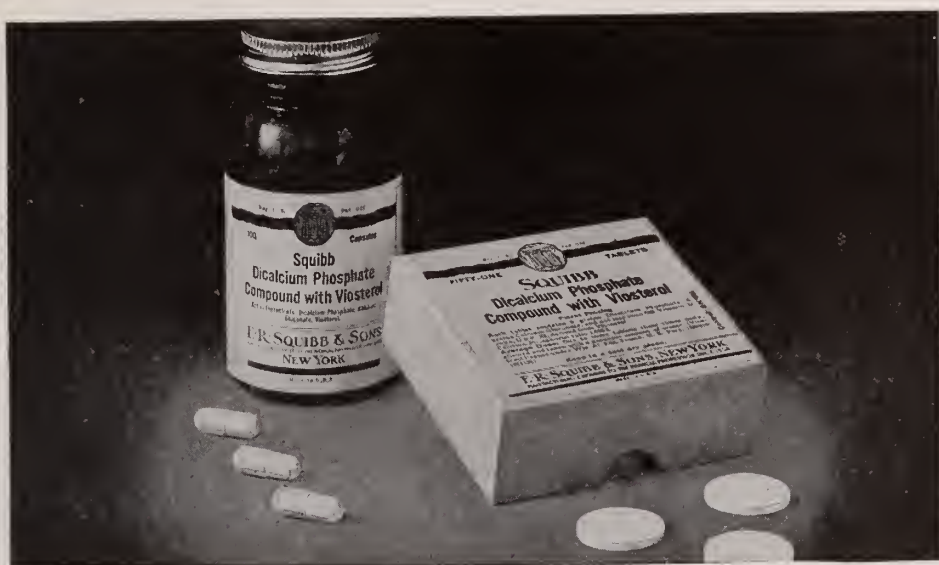
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Supply Extra Calcium this pleasant, effective way

It is generally recognized that calcium and phosphorus metabolism, during pregnancy and lactation, is subjected to extra demands. Since the infant depends upon the mother for these essential elements and because many of the foods commonly used in the American diet are low in calcium, it is often desirable to prescribe an effective dietary supplement.

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Dicalcium Phosphate Compound with

Viosterol Squibb is available in both tablet and capsule form. The tablets are flavored with wintergreen and have a very pleasant taste. The capsules are useful as a change from the tablets, especially during pregnancy and lactation which may require routine use of a calcium preparation over an extended period of time.

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Dicalcium Phosphate Compound with Viosterol
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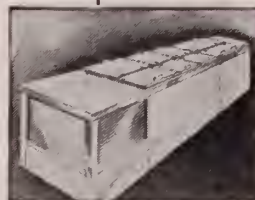
Such care pays a rich reward in the accurate standardization and reliable uniformity in production of 'Digitol' tincture of digitalis. Because of this controlled environment, the Sharp & Dohme Biological Assayist is assured of greater uniformity in the results of his assay; it assists him in attaining the reliable accuracy and dependability required by physicians when prescribing a digitalis preparation.

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DIGITALIS grown at the Sharp & Dohme Drug Farm is of exceptionally high quality, due to scientific control of cultivation and drying. Over 100,000 plants are being set out this year.

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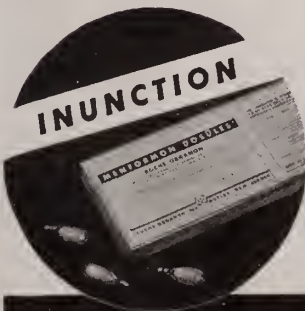
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The old nickel bank finds itself on short rations. No longer is it necessary for the anxious parent to combine thrift with bribery when the child requires an aid in relieving the costiveness frequently occurring in children.

Loraga has succeeded in meeting the needs of the situation. A plain mineral oil emulsion, without any added laxative ingredients, Loraga has achieved a palatability and freedom from oiliness that even the most exacting taste will accept without remonstrance.

For children and for adults who need the gentle aid to evacuation that a fine, plain mineral oil emulsion offers, Loraga makes available a preparation that has earned favorable professional recognition because of therapeutic merit. A note on your letter-head will bring you a liberal trial quantity of Loraga. Available in 16-ounce bottles.

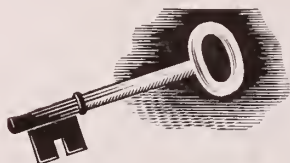
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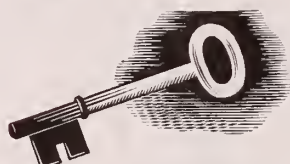
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FOUR KEY PRINCIPLES IN INFANT FEEDING

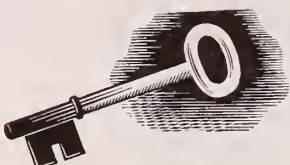
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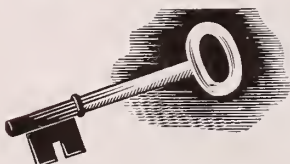
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All
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administration
ELIXIR
SYRUP
TABLETS
CAPSULES

Contains vitamins B₁, B₂(G), B₆,
nicotinic acid and filtrate factor

POTENCY OF DECLARED FACTORS

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	Each teaspoonful (5 cc.) contains	Each teaspoonful (5 cc.) contains	Each tablet or capsule contains
Vitamin B ₁	0.75 mg. (250 U.S.P. or international units)	1.5 mg. (500 U.S.P. or international units)	0.375 mg. (125 U.S.P. or international units)
Vitamin B ₂ (G)	500 gammas (200 Bourquin-Sherman units)	600 gammas (240 Bourquin-Sherman units)	250 gammas (100 Bourquin-Sherman units)
Vitamin B ₆	300 gammas	675 gammas	100 gammas
Nicotinic Acid	8 mg.	9 mg.	4 mg.
Filtrate Factor	54 Jukes-Lepkovsky units	120 Jukes-Lepkovsky units	20 Jukes-Lepkovsky units

DAILY DOSAGE

	ELIXIR OR SYRUP	TABLETS OR CAPSULES
Prophylactic		
Children	1-1½ teaspoonfuls	2-3
Adults	2 teaspoonfuls	4
Therapeutic*	1-2 tablespoonfuls	6-12

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COMPANY,
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Absolutely no sugar.
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Practical for many diets including: diabetic, peptic ulcer, convalescent, anorexic, tubercular, colitic, aged, etc.

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Only contain 10% to 12% gelatine.
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Contain flavoring, acid and coloring matter.
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DIABETIC DIETS *can be improved* *and varied with* **KNOX GELATINE** (U.S.P.)

We have compiled a booklet which may save you time and trouble in preparing diets for your diabetic patients. It is called "Feeding Diabetic Patients—Young and Old"

The booklet contains a discussion of the principles of diabetic feeding, practical tables of food composition expressed in percentages of 100-gram portions, sample menus, and 33 pages of simple, economical and attractive recipes with composition and caloric value of all foods and recipes.

The use of Knox Plain (Sparkling) Gelatine is explained, with examples of how Knox Gelatine can give variety to appetizing "full-sized" meals without interfering appreciably with caloric requirements. (Knox is 85% to 87% protein—entirely free of sugar.) It contains a majority of the food amino acids and has been shown to supplement protein of nearly every variety of food.

Also included in this booklet are typical dietary prescriptions representing Normal Carbohydrate Maintenance, Restricted Carbohydrate High Fat, Diabetic Reducing and Children's Diabetic diets.

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Hence in the bowel, Mucilose produces a soft bland mass which *stimulates peristalsis in a normal physiologic manner by augmentation.*

Note that Mucilose does not interfere with the absorption of vitamins from the intestinal tract, does not impair digestion, does not leak through the anal sphincter. No allergic mani-

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Therefore, for the relief of bowel stasis, may we suggest that you prescribe

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THE OFFICIAL ORGAN OF
THE ILLINOIS STATE MEDICAL SOCIETY

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*Deceased

THE VANISHING HOME

Dr. M. A. Austin in Clinical Medicine & Surgery says: Unfortunately, the home has become merely a place to go when everything else is closed. A person is born in a hospital; given a superficial education in schools that President Hutchins, of Chicago, says are the worst in the world and have the poorest teachers; the children go through adolescence in automobiles and if lucky, are married in a church; they live in an apartment and entertain at a picture show; they eat at a drug store; die in a hospital; are buried from a mortuary; and stored in a mausoleum. The only "God Bless Our Home" motto that I know of is in a museum. The responsibility of parenthood has been taken over by the State and a mother's pension. The responsibilities of one's parents is also a State function now, with old-age pensions. And too soon, I fear, the family physician will be merely a medical technician, subsidized by the government, and as impersonal as his probable ally, the unemployment relief part of the social security set-up.

We have made Medicine such a nightmare to the laity, by publicizing its attainments in unusual cases, that the layman has developed a doctor phobia. Our various campaigns have undoubtedly done far more good than harm, in giving information about tuberculosis, syphilis, cancer, and pneumonia; but, with the demand for an early diagnosis, is the inevitable accompaniment that this diagnosis and the treatment of these conditions take both time and money. As a direct outcome of this propaganda, the treatment of these patients has become more and more a State function.

I went through the influenza epidemic at Camp Custer during 1918, and in one day 141 boys died. In my opinion, as many of them died because of their environment as from the disease; and the same hospital fear is engendered

in many patients who die in hospitals, and yet who might possibly have survived had they had ordinary treatment in their home surroundings, aided by the encouragement of love and affection by their family and friends.

PROGRESS IN THE CARE OF DIPHTHERIA

Fifty years ago diphtheria was so prevalent, so feared, and so contagious that it did not seem an unwarranted procedure for people to cross the street in a wide area to avoid passing directly in front of the house quarantined with that disease.

Until scientific discoveries revealed the cause and the methods for the cure and control of diphtheria, few diseases had presented such high mortality, or before whose onsets mankind was so helpless. An outbreak of diphtheria in a community caused a shudder of horror. The old records are full of instances where all the children of a family were swept away in spite of what medical knowledge of the time could do.

In the original registration states — Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Michigan, Indiana, and the District of Columbia — the diphtheria death-rate in 1900 was 40.4 per 100,000 total population. By 1910 it had dropped to 22.5; a decade later, to 17.3. About that time a still more rapid decline began, and the rate in the same group of states was 4.3 in 1930 and 1.3 in 1934. It fell, from 3.9, in 1933, the first year such a figure was made, to 2.4 in 1936, for the total continental United States.

"Statistics tell us that the deaths from diphtheria occur chiefly among children less than five years old. In general, two factors operate to produce this result: namely, the fact that natural immunity to the disease is more rare during the early years of life; and the tendency of diphtheria to involve the larynx and windpipe in young children.

"Again, it is difficult to persuade some parents to permit their children to receive protective inoculations of toxin-antitoxin, or toxoid (which is better for infants). They hesitate, either out of pure ignorance, from ungrounded fear of the injections, or because they prefer to let their children take the chance of infection, intending

to have them treated properly when they get sick. This latter alternative, of course, may be too late.

"Consequently, we still have a good many cases of diphtheria and still too many deaths, when it is considered that both are preventable. In some communities, where a large proportion of the children have been immunized, diphtheria has practically disappeared and there have been no deaths for several years."

Whether a person is immune to diphtheria or not may be determined by the Schick test. This consists of injecting a minute measured amount of toxin between the layers of the skin — not beneath — usually of the forearm. If the person is immune, no reaction occurs; if not immune, a red spot develops at the place of injection. This test was formerly employed routinely on all children before giving them toxin-antitoxin or toxoid; but the extra time taken in the handling of the children plus the fact that nearly all babies and young children are not immune, has caused many health officials to omit the procedure now. If a few children get the preventive injections unnecessarily, no harm is done. Schick tests should be made some months after the preventive inoculations in order to find out whether they have been effective, since some persons are harder to immunize than others and require more injections than are routinely given.

"Diphtheria was known as early as the Homeric period in Greece, and never since then has the world been free from occasional epidemics. In 1821 Bretonneau published a complete clinical description of the disease and gave it the name "diphtheria" (from the Greek, meaning "membrane"). In 1883 Klebs described the diphtheria bacillus, and in 1884 Löffler grew the bacilli in pure culture. Antitoxin was first used in 1894 for treating human cases and conferring temporary immunity upon family contacts. In 1913 Schick devised the test to determine immunity to diphtheria, and in the same year toxin-antitoxin immunization of a small number of human beings was reported by Von Behring. In the next five or six years the procedure was tested and used on a moderately extensive scale, particularly in institutions. The first extensive use of the method outside of institutions was inaugurated about 1920 by Park

and Zingher among New York City school and pre-school children.

Diphtheria begins to show symptoms in from two to five days after exposure. It may be conveyed to another person as long as the bacilli, in virulent form, remain in the patient or carrier. This may be weeks, even months. It is usually contracted by contact with the sick person or carrier, by droplet infection, or by handling recently soiled articles. Sometimes, it is conveyed in milk; in this case extensive epidemics may be caused which are almost explosive in their suddenness."

AUTOMOBILE ACCIDENTS ANALYZED

"America's street and highway system is a vast stage on which is being presented the longest and most lavish procession in history," the foreword states. "In a pageant of such magnitude there are bound to be mistakes, usually caused by some actor who becomes confused or forgets his part. In the great spectacle as a whole these interruptions are scarcely noticed, but to those who by accident or indiscretion become involved, these unrehearsed by-plays often assume the proportions of a major tragedy."

According to the tenth annual safety booklet just issued by The Travelers Insurance Company. The booklet, entitled "Smash Hits," records pictorially and graphically the facts about accidents in which 32,100 persons were killed and almost a million and a quarter others were injured last year.

Highlights from the annual report, based on official records of the 48 states, include the following interesting facts:

Exceeding the speed limit was responsible for 36.5 per cent of the fatalities and 22.5 per cent of the injuries in 1939.

Nearly 40 per cent of all traffic accident victims were pedestrians.

Almost 87 per cent of the fatal accidents occurred in clear weather and almost 80 per cent happened when the road surface was dry.

More than 93 per cent of the drivers involved in fatal accidents were male and less than seven per cent female.

More persons were killed on Sunday than on any other day of the week, while the heaviest injury toll came on Saturday. Wednesday was the safest day for travel. The period between

7 p.m. and 8 p.m. was the most dangerous hour of the day.

The motor vehicle death rate, based on mileage, is at least three times as high by night as by day.

The report views with growing concern the increase in automobile-pedestrian accidents, particularly in metropolitan areas at night, and devotes an entire section to the problems of the man on foot. One graphic illustration shows that while a man takes one step and advances one yard, an automobile being driven at 30 miles an hour advances nine yards. Another shows that a pedestrian in dark clothing is all but invisible to the driver at night a mere 100 feet away but it clearly visible in light clothing up to 200 feet or more.

Failure on the part of both drivers and pedestrians to appreciate these and many other facts was largely responsible for the record of 12,470 pedestrians killed and almost 300,000 injured in 1939, the report states.

THE 1941 ANNUAL MEETING

For the first time in thirteen years, the Illinois State Medical Society will have the annual meeting in Chicago. The meeting will be held at the Palmer House with all sessions presented "under one roof," on May 20, 21, 22, 1941.

Those responsible for the development of the program have been working diligently for many months in the effort to make this an outstanding meeting. During recent years it has been the policy of this society to hold more general sessions and limit the amount of time for the individual section meetings. This procedure has been quite popular with the membership, and this plan has been carried out again for the 1941 meeting.

On Tuesday evening, May 20, the Orations in Medicine and in Surgery will be presented with two of the country's outstanding men selected to deliver these important addresses. Dr. John H. Musser, Professor of Medicine at Tulane University School of Medicine, New Orleans, will deliver the Oration in Medicine, while Dr. Owen H. Wangenstein, Professor of Surgery, University of Minnesota School of Medicine, Minneapolis, will give the Oration in Surgery.

The programs this year will continue on

Thursday afternoon — a change from the usual arrangement of having all meetings end at noon that day. This will give an additional half day of programs for the several sections.

The Scientific Exhibits, under the chairmanship of Frank J. Jirka, and with J. P. Simonds as Director, will be intensely interesting to all who attend the meeting. The large ballroom at the Palmer House will be filled with these unusual interesting exhibits.

The Technical Exhibits will be housed in the spacious Palmer House exhibit hall, and the booths this year will be completely filled with the many products which the modern physician uses in his practice. Much time and effort, as well as expense, has been expended by the many reliable companies making products used today by the medical profession. Ample time will be found for all who attend the meeting to visit the technical exhibits.

In accordance with the usual custom, the President's Dinner will be held in the Grand Ball Room of the Palmer House on Wednesday evening, May 21. Although definite announcements will not be made at this time, it is planned to have a nationally famous speaker appear at the President's Dinner to give a talk which will be in keeping with the times, and will be of interest to everyone. Several new features for the President's Dinner will be arranged and will appear in the announcements in the official program to be published in the May JOURNAL.

Plan to attend your annual meeting. From the arrangements under way, we are certain that this will be an outstanding meeting with the largest attendance the Society has yet registered.

HENRY GARNSEY OHLS

1860 — 1941

The passing of Henry Garnsey Ohls, Ph.B., M.D., Managing Editor of the Illinois Medical Journal, occurred suddenly on Monday, March 17th, shocking his family and scores of friends. The cause of death was coronary thrombosis.

Born in Chicago in 1860, he spent most of his boyhood in Hinsdale where he received his early education. He earned his Bachelor of Philosophy Degree at the University of Michigan. His editorial ability asserted itself early in his

student life, as he was one of the founders of the Michigan Argonaut, a campus publication during his college days. He received his Degree of Doctor of Medicine from Rush Medical Col-



Dr. Henry G. Ohls

lege in 1887. After three years of practice in Clinton, Iowa, he returned to Chicago taking up post-graduate work at the Chicago Polyclinic with special class work under Doctor John B. Murphy. These studies won him a seven year assistantship to Professor E. Fletcher Ingals. In 1905 he became associated with the American Medical Association and joined the Staff of the Chicago Department of Health, where he served many years as Assistant Chief of the Bureau of Vital Statistics. In 1909 he became a member of the Editorial Staff of the Illinois Medical Journal and four years later was named its Managing Editor, which position he faithfully filled until his demise twenty-eight years later.

In 1894 he was married to Miss Anna Elizabeth Oden of Benton Harbor, Michigan. Mrs. Ohls preceded him in death in 1905. Although their married life was unfortunately short, it was blessed with unusual serenity and understanding. He is survived by a daughter, Mrs. Kathryn Simmons, a son John, and three grand-

children, Carol and Phil Simmons, and Henry G. Ohls.

In his quiet, unobtrusive way, Henry Ohls effectively handled an unbelievable amount of work and won many battles for his beloved profession of medicine.

Doctor Charles J. Whalen wrote an article commemorating Doctor Ohls' first twenty-five years of service with the Journal in which he said, "It is plain and unvarnished veracity to state that this silver anniversary is the pinnacle of a pyramid of twenty-five years of sterling service beaten into shape from the shining integrity, sterling qualities and solid wisdom of a man who is a philosopher of parts as well as a philosophic physician."

The Officers and Members of the Illinois State Medical Society and especially the Editorial Staff and readers of the Illinois Medical Journal are acutely conscious of the immensity of their loss in the passing of Dr. Ohls. We extend to his family our sincere sympathy with the assurance that we also share in their grief.

ILLINOIS STATE MEDICAL SOCIETY COMMITTEE ON MEDICAL BENEVOLENCE

The House of Delegates of the Illinois State Medical Society at its Annual Meeting held May 21-22-23, 1940, voted that certain changes be made in the Constitution and By-Laws to enable the Society to establish a Benevolent Fund for indigent physicians and their widows.

The plan adopted very closely resembles the one which has been operating in Pennsylvania for the past thirty-seven years.

We are publishing herewith the personnel of the Committee together with an outline of the purposes and the power given the Committee to carry on this work.

Committee on Medical Benevolence, John S. Nagel, Chairman, 185 N. Wabash, Chicago, Ill. Charles H. Hulick, Shelbyville; Clarence H. Boswell, Rockford.

PURPOSE OF THE COMMITTEE

1. To create a Benevolence Fund:
 - a. Through allocation of \$1.00 each year from dues of each member.
 - b. Through gratuities, endowments, etc.
 - c. Through the efforts of the Women's

Auxiliary to the Illinois State Medical Society.

2. To investigate cases of alleged financial difficulties on the part of members, their widows or widowers.

3. When found worthy, to appropriate regular monthly benefits not to exceed \$25.00 to \$30.00 per month in any one case. When deemed advisable, may appropriate more over a short period of time when rehabilitation seems probable.

4. To designate the component society secretary in each county as the county chairman to submit applications from members for benefits, then to see that a questionnaire form is properly executed to give the desired information relative to the case. The councilor of the District may assist the Committee in submitting names of members, their widows or widowers, when he believes the individual is entitled to the benefits herein prescribed.

5. When it is the opinion of the Committee that the case is a worthy one and benefits should be allowed, the Chairman of the Committee should notify the Secretary of the State Medical Society, stating the amount agreed upon as the regular allowance, stating the intervals at which the benefits shall be paid, so that proper vouchers may be submitted.

THE INVESTIGATIONS

When it is reported to the Committee that a member, widow or widower of a member is needy and unable to secure the necessities of life, a questionnaire form shall be submitted from the Secretary's office asking for the following information:

1. A brief social history of the applicant, past and present. Data concerning reasons for being in want whenever possible, and all other pertinent information which will enable the Committee to take the proper action.

2. A brief financial history including present assets and income, sources and amount.

3. Disbursing of present resources (rent, food, clothing, etc.).

4. Statements as to probable permanency of the present distress.

5. Any possible source of assistance such as:
 - a. Relatives
 - b. Friends
 - c. Fraternal Organizations

d. Insurance

e. Pensions

6. Have all sources of help been solicited?

7. Additional information. Means by which influence might be exerted to find employment or some other source of income. Is there a possibility of rehabilitation? (With modern financial assistance over a short period of time, would it be possible for the applicant to become self-supporting?)

PROCEDURE

Requests from members, their widows or widowers for assistance, if submitted to the Secretary, shall be referred to the Committee promptly. At the same time a questionnaire form will be submitted to the applicant or to the county society secretary, or to the Councilor if the information is submitted by him. All possible information which will aid the Committee in determining the eligibility for assistance, the amount actually needed, or if rehabilitation through short time payments is probable, should be submitted promptly.

Each case will receive the proper consideration by the entire committee which shall pass final judgment on:

1. Eligibility for aid.
2. The amount of aid.
3. Whether for a short time or permanently.

The decision of the Committee shall be final and there will be no higher authority within the Society to whom appeals from decisions of the Committee can be referred.

In the event that additional income is received and the individual is no longer eligible for further benefits, the county society secretary or the Councilor submitted the data, should notify the Committee of these facts promptly.

As soon as a reasonable amount is accumulated in the Benevolence Fund, only the income from the Fund shall be used to pay benefits.

The Medical Benevolence Fund shall be subject to an annual audit as are other funds of the Illinois State Medical Society, although merely the amount of the Fund, the payments made during the year, the additions to the Fund, and the interest from investments shall be mentioned. The names of beneficiaries shall not appear in the annual audit, nor shall they be mentioned in the annual report of the Committee to the House of Delegates.

The Secretary of the State Medical Society

shall maintain a separate file for all correspondence relative to beneficiaries, amounts paid, investigations and minutes of meetings of the Committee, which shall be a closed file and not open to inspection by others than members of the Committee, the Auditor, or a regularly designated Committee of the House of Delegates.

As the regular vouchers of the Illinois State Medical Society are paid through the State Bank and Trust Company of Evanston, all funds for benevolence purposes shall be maintained in another bank and payments for benevolence purposes shall constitute the only vouchers drawn on these funds. The council of the Illinois State Medical Society has allocated the sum of \$5,000.00 maintained in the National Bank of Monmouth for several years as a Certificate of Deposit, as the nucleus for the Benevolence Fund, and payments shall be made from this fund on this bank.

NOTE: The above report and procedure was presented to the Council of the Illinois State Medical Society in regular session on August 4, 1940, by the Chairman of the Committee on Medical Benevolence. The report and procedure were approved, and the Committee instructed to make the necessary arrangements to function immediately. The Council was authorized by the House of Delegates at the 1940 annual meeting to approve a method of procedure so that the work could be started with a minimum amount of delay.

Vladimir Horowitz, pianist, whose concerts occasionally have been broadcast, has been forced to cancel all engagements for the remainder of the year. His three consulting physicians released the following statement:

"We have under our care Mr. Vladimir Horowitz who is convalescing from a traumatic tenosynovitis of the flexor digitorum sublimis and profundis muscle at the metacarpophalangeal joint."

Horowitz has an injured finger.

—Radio Column, Pittsburgh Post-Gazette.

Leonardo da Vinci was the originator of anatomic illustration. After him, came a whole host of anatomists — Scarpa, the Bells, Sustachius, Camper, Soemmering, et al — who were sufficiently gifted with that artistic touch — to illustrate their own volumes with their own hands. This art of illustration seems to have been completely lost in modern times.—Bulletin, The Toledo Academy of Medicine.

MEDICAL ECONOMICS

H. M. Camp, M. D.
E. P. Coleman, M. D.
J. H. Hutton, M. D.
Ralph Peairs, M. D.
R. K. Packard, M. D.

Edited by the Committee on Medical Economics

of the
Illinois State Medical Society
E. S. Hamilton, M. D., Chairman
Kankakee, Illinois

C. H. Phifer, M. D.
C. B. Reed, M. D.
C. B. Ripley, M. D.
C. E. Wilkinson, M. D.
W. M. Hartman, M. D.

Address all letters and communications to the Chairman.

The trial of the American Medical Association and its Officers in the District Court of the United States in the District of Columbia, continues to be the event of paramount importance to the medical profession at this time. There still is little mention made of it in the daily press or numerous weekly reviews of the news, which come to the desk of the majority of us these days. We continue to have available in the Journal of A.M.A. a word for word report of the testimony given in the trial at Washington. It is quite evident to those of us who read it regularly, that the government is making a serious effort to convict the American Medical Association of the trust charge. The exact reason for this is as yet obscure, but it is difficult to believe that the events in Washington with the group hospitalization plan of the Home Owners Loan Corporation are the real cause of all this litigation. It seems more probable that this is part of the plan to socialize the practice of medicine and that by this means a fine opportunity is offered to get large amounts of publicity for the alleged need of a change. A fairly careful reading of the testimony presented to date has not disclosed any grave errors on the part of the medical profession at least from the viewpoint of the medical profession. We should continue to read the testimony presented by both the government and the defense, so that we will be conversant with the facts presented and possibly be able to make some decision as to the real reason for the trial.

With an acceleration of the rate of induction of the men into the armed forces of the United States under the Selective Service Act, the work of the medical profession in examining and classifying the eligible men has been greatly increased. As intimated last month in this column there has not been the cooperation between those in charge of the Induction Board and the local Boards, which is desirable. The local examining Board and certainly the Advisory Boards should have the same standards as the

Induction Boards if the time and energy of the medical members of the local boards is to be conserved at all, and if the draftees are to be spared the inconvenience and loss of time, not to mention heart aches, which accompany their preparation for entrance into army service. When 29 out of 54 men are returned by the Induction Board after examination and classification locally, as reported to me in one county, it is quite evident that there is lack of understanding between the two boards. Part of this could be cleared up in our opinion, if the plan of having all examinations be made by a group rather than by individual physicians in their own offices. Examination made by a group would be more thorough, since the special examination such as the eyes and ears could be made by a specialist in that line, and in addition any variations from the normal discovered in the course of the examination could be discussed by the Board as a whole and the Chairman of the Board would be able to classify the majority in accordance with the opinion of the board and the instructions in Volume Six of the Selective Service Regulations. We realize only too well that examinations were started before all the supervision and regulations were completed, and that often the facilities for adequate examinations outside the offices of the physicians were lacking, but surely after six months these supervisory details should have been corrected and we should be able to do our best work in these examinations. It seems to the writer that every physician on a local or advisory board should at this time make every effort to have all examinations made at some place other than his office in a specially equipped room by men specially trained in their particular line, so that at the completion of the examination, the man can be definitely classified correctly. If we will request the necessary cooperation from the proper officials of the Selective Service Boards, both local and state it seems unbelievable that they can be refused. The present rejection by the Induction

Boards is too high and reflects unkindly on the local medical examiners. It should be corrected and can be if the local examiners will insist on making the examinations in the proper places under proper conditions.

Under the spell of all out aid to Britain and the expenditure of untold amount of money and energy in arming the nation, apparently Senator Wagner has not forgotten his pet project, "A National Health Act." At least that is the substance of authoritative information from Washington. How this will be introduced, possibly as a defense measure, and how broad will be its program has not as yet been determined but it seems reasonably sure that it will be presented at this Congress, probably by some Senator other than Wagner, but under his tender care and management. It may be forced through, if the medical profession is not most alert, for apparently all that is necessary at this time to pass any desired bill at Washington is to get the green light and the necessary votes are ready. On page 48 of March Medical Economics is an article by Jay A. Bonwit on this topic under the heading "New Wagner Bill Held Likely."

The members of the Medical Economics Committee wish at this time to express their sympathy to the bereaved family of Dr. Henry G. Ohls for many years the managing Editor of the Illinois Medical Journal. From the time that this column was started up to the last issue, Dr. Ohls has edited and proof-read all material in this column. Only too well do we know how badly it needed both, particularly in its early years. Dr. Ohls was always kind and considerate in his work and we wish to express our thanks publicly at this time.

The criticism is often made by the rank and file of the medical profession that the parent bodies do very little. Of course this is untrue as all on the inside well know. However, it is often difficult to point out definite tangible accomplishments of the Illinois State Medical Society for their members even though they are being made all the time. So it is a great opportunity to present an article under the heading "Illinois Bans Graduates From Foreign Medical Schools" in this column this month. This problem has been before the officers of the Illinois State Medical Society for at least five years, during which time they have done everything pos-

sible to correct the difficulties well known to the entire medical profession of the state in regard to the licensing of graduates of foreign medical schools in Illinois. However, little was accomplished due to factors completely beyond the control of the medical profession. However since the first of the year much has been accomplished as this resolution will explain. Of particular importance is a statement by the Secretary of the Examining Committee of the Department of Registration and Education, Dr. John R. Neal, as follows: "The resolution presented by the Executive committee of the Illinois State Medical Society and unanimously adopted by the Council of the Society on January 5, 1941 was accepted by Mr. Frank G. Thompson, Director of Registration and Education for the State and the Department has denied all such applications since February 21, 1941. Governor Dwight Green also endorses the proposition." So it looks as if this problem is settled for the present at least and the credit must be given to the work of the Officers of the Illinois State Medical Society.

E. S. Hamilton, M. D.,
Chairman of Committee

"ILLINOIS BANS GRADUATES FROM FOREIGN MEDICAL SCHOOLS."

The resolution presented by the Executive Committee of the Illinois Medical Society and unanimously adopted by the Council of the Society on January 5, 1941, was accepted by Mr. Frank G. Thompson, Director of Education and Registration for the State, and the Department has denied all such applications since February 21, 1941. Governor Dwight Green also endorsed the proposition.

WHEREAS, any historical review of the development of medical licensure in the State of Illinois brings into prominent relief the important role that the medical Society has assumed in each step of that development, the Society having initiated movements from time to time to raise the requirements for licensure with the sole objective in view to provide for the people of the State the very best quality of medical care available; and

WHEREAS, the existing requirements for medical licensure if properly enforced within the intent of the law will provide ample protection

to the people from the ministrations of incompetent practitioners so far as any law can afford that protection; and

WHEREAS, the law devolves on the Department of Registration and Education the ultimate responsibility of determining if a medical school is reputable and in good standing and if its graduates are therefore eligible for licensure, yet the Department may not, under the law, accredit any school except on the recommendation of the Medical Examining Committee; and

WHEREAS, the Medical Examining Committee has established a standard as set forth in the accompanying statement for appraising the reputability and good standing of medical schools, which standard the Department has accepted but applies only so far as domestic medical schools are concerned; and

WHEREAS, a determination of the reputability and good standing of medical schools in the United States is on a sound basis by reason of periodic inspections of such schools by the Council on Medical Education and Hospitals of the American Medical Association and the requirements for membership in the Association of American Medical Colleges, but the Department has available no comparable evidence with respect to medical schools located elsewhere because of the fact that no agency exists in this country which inspects or classifies such foreign schools; and

WHEREAS, despite this lack of authentic information as to the quality of instruction given in foreign schools, graduates from such schools are in increasing numbers receiving licenses to practice medicine in Illinois, as evidenced by the following tabulation of foreign graduates licensed during the last decade:

<i>Year</i>	<i>Foreign Graduates Licensed</i>
1931	9
1932	11
1933	9
1934	11
1935	10
1936	18
1937	34
1938	46
1939	81
1940	116

and as evidenced by the further fact that as of December 20, 1940, there was a total of 160 incomplete applications from foreign graduates pending before the Department, in addition to the applications of twenty-four applicants that are being given consideration for the January, 1941, examinations; and

WHEREAS, according to the statistics furnished by the Bureau of Immigration of the United States, the influx of graduates of foreign medical schools into the United States has increased from 329 in the fiscal year ending June 30, 1931, to a total of 1,384 during the fiscal year ending June 30, 1939, making a total of 4,549 for the same period, a large majority of whom have been licensed in other States but may hereafter apply for licenses in Illinois; and

WHEREAS, the ethical and professional fitness of a candidate for medical licensure can not be appraised solely on the strength of an examination but must be gauged also by the quality of instruction that the applicant has received during his preprofessional and professional schooling; and

WHEREAS, the Medical Examining Committee at a meeting held January 23, 1939, recommended to the Department of Registration and Education the following rule to govern the admission of graduates of foreign medical colleges to examinations for licenses to practice medicine in Illinois, which recommendation was not accepted by the Department despite the fact that the law apparently requires the Department to accept the recommendations of said Committee:

"Effective April 1, 1939, the recognition of all medical colleges located outside the United States will be withdrawn by the Department of Registration and Education of the State of Illinois.

"Any such medical college may apply for recognition at any time thereafter, and the Department will consider the application only after a personal investigation is made of the college by a committee appointed by the Director of the Department of Registration and Education; the expenses of such investigation to be paid by the school making application for recognition."

and

WHEREAS, the foregoing situation presents

a continuing menace to the health and welfare of the people of Illinois and thus constitutes a problem causing great concern to the medical profession of the State; be it therefore RESOLVED by the Council of the Illinois State Medical Society at a meeting held January 5, 1941

(1) That recognition for medical licensure Illinois, whether after examination or otherwise and irrespective of the question of citizenship, of graduates of foreign medical schools be strictly in accordance with the method of recognition that is applied with respect to the graduates of medical schools located in the United States, any other method of recognition being not only illegal but constituting the grossest type of discrimination in favor of foreign graduates.

(2) That in the future recognition be accorded no graduate of a foreign medical school who applies for license to practice medicine in the State of Illinois unless there is in the possession of the Department evidence of the quality of instruction imparted by the school of graduation of equal credibility with the evidence required of approved domestic schools and that the identical standard be applied in approving all medical schools, whether such schools be located in the United States or in foreign countries.

(3) That a copy of these resolutions be spread on the minutes of the Council and copies be sent to Honorable Dwight H. Green, Governor of Illinois, to the Honorable Frank G. Thompson, Director of the Department of Registration and Education, and to the Chairman of the Medical Examining Committee.

Correspondence

FOURTH ANNUAL MEETING IOWA INTERPROFESSIONAL ASSOCIATION

The program outlined below will take place Thursday, May 15, 1941 at 2:00 p.m. at the Hotel Blackhawk, Davenport, Iowa.

Opening Remarks: — Mr. George W. McChane, Waterloo, President, Iowa Interprofessional Association.

The Need for Greater Interprofessional Cooperation in a Democracy. Raymond B. Allen,

M. D., Chicago, Executive Dean, Professional Colleges, University of Illinois.

Vitamin B. William H. Sebrell, M. D., Washington, Chief, Division of Chemotherapy, National Institute of Health.

Discussion by: — Phillip C. Jeans, M. D., Iowa City, Professor of Pediatrics, College of Medicine, State University of Iowa.

Clinical Aspects of the Newer Sulfonamide Drugs. John M. Shaul, M. D., New York.

Discussion by: — D. B. Palmer, D. V. M., Minneapolis, and C. H. Covault, D. V. M., Ames, Department of Medicine, Veterinary Division, Iowa State College.

This program will be held during the annual meeting of the Iowa State Medical Society in Davenport, May 14-15-16 — 1941.

PRIZE CONTEST OF AMERICAN ASSOCIATION OF OBSTETRICIANS

To the Editor:

Rules Governing the Award of "The Foundation Prize" of the American Association of Obstetricians, Gynecologists and Abdominal Surgeons

(1) "The award which shall be known as 'The Foundation Prize' shall consist of \$150.00.

(2) "Eligible contestants shall include only (a) interns, residents, or graduate students in Obstetrics, Gynecology or Abdominal Surgery, and (b) physicians (with an M. D. degree) who are actively practicing or teaching Obstetrics, Gynecology or Abdominal surgery."

(3) "Manuscripts must be presented under a nom-de-plume, which shall in no way indicate the author's identity, to the Secretary of the Association together with a sealed envelope bearing the nom-de-plume and containing a card showing the name and address of the contestant."

(4) "Manuscripts must be limited to 5000 words, and must be typewritten in double-spacing on one side of the sheet. Ample margins should be provided. Illustrations should be limited to such as are required for a clear exposition of the thesis."

(5) "The successful thesis shall become the property of the Association, but this provision shall in no way interfere with publication of the communication in the Journal of the Author's choice. Unsuccessful contributions will be returned promptly to their authors."

(6) "3 copies of all manuscripts and illustrations entered in a given year must be in the hands of the Secretary before June 1st."

(7) "The award will be made at the Annual Meetings of the Association, at which time the successful contestant must appear in person to present his contribution as a part of the regular scientific program, in conformity with the rules of the Association. The successful contestant must meet all expenses incident to this presentation."

(8) "The President of the Association shall annually appoint a Committee on Award, which, under its own regulations shall determine the successful contestant and shall inform the Secretary of his name and address at least two weeks before the annual meeting."

JAS. R. BLOSS, M. D.
Secretary.
418 Eleventh Street,
Huntington, W. Va.

EXAMINATIONS FOR APPOINTMENTS, MEDICAL CORPS OF THE U. S. NAVY

The Surgeon General of the Navy, Rear Admiral Ross T. McIntire, (MC), U.S.N., announced the next examination for appointments as commissioned officers in the Medical Department of the Navy will be held at all of the larger naval hospitals and at the Naval Medical Center, Washington, D. C., on May 12 to 15, inclusive, 1941. Applicants for appointment as Assistant Surgeon, effective approximately two months from date of examinations, may now request authorization to appear for examination. Requests for such authorization should reach this bureau prior to April 21, 1941.

Applicants for appointment as Assistant Surgeon are required to be citizens of the United States between the ages of 21 and 31, graduates of Class "A" medical schools, have had at last one year of intern training in a hospital accredited for intern training by the Council on Medical Education and Hospitals of the American Medical Association, and to meet the physical and other requirements for appointment.

The Medical Corps of the Navy is being increased in strength proportionate with the expanding Navy and U. S. Marine Corps. Service for medical officers is active professionally and attractive in assignments at sea, on shore duty, and on foreign shore stations. In the normal rotation of assignments every practicable consideration is given the officer's preference for the type of duty he desires. The Naval Medical School at the Naval Medical Center, Washington, D. C., offers a course of post-graduate instruction and instruction in those branches of medicine which apply

particularly to naval service. Under normal conditions newly appointed officers are assigned to this course upon their entry into the service or during their first few years of naval service.

Naval medical officers are encouraged to develop a specialty after they have completed their first cruise at sea. Shortly before completion of his sea duty, the Navy doctor may request special training in the Medical Department specialty in which he is interested. Such requests are acted upon by a special board in the Bureau of Medicine and Surgery and, if approved, the Navy doctor is sent to a hospital for training and experience in that specialty for one year. Upon completion of this training, he is assigned to post-graduate instruction at one of the many medical centers in the United States for a period up to one year after which, in-so-far as is practicable, he is retained in that type of duty. Some of the specialties in which qualifications may be obtained are: Surgery; Medicine; Otolaryngology; Laboratory; X-ray; Pathology; Public Health; Psychiatry; Deep-Sea Diving; Aviation Medicine (Flight Surgery); Gas Warfare, and Tropical Medicine. Several officers have been trained in research particularly applying to problems arising in submarine and aviation activities.

A circular of information for applicants for appointment as medical officers of the Navy, containing full information regarding physical requirements, professional examinations, rates of pay, and promotion and retirement data may be obtained by addressing the Bureau of Medicine and Surgery, Navy Department, Washington, D. C.

VITAMINS NOT ALL

While scientific research has given convincing evidence of the importance of the vitamins in human nutrition, it has just as conclusively shown the need for various mineral elements, particularly calcium, phosphorus, iron and copper, for protein of a high biologic value and for sufficient calories to meet the varying activity needs of the body. No one food is the all important factor in nutrition since there is an intimate relationship among all the essential factors; carbohydrates and fats have a "sparing" influence on protein metabolism; without a balanced and adequate supply of calcium and phosphorus vitamin D is of no avail; calcium and phosphorus work together to give rigidity to skeletal and dental tissues; without traces of copper, iron is not adequately used; without calcium vitamin A will not support growth and vice versa; without some protein from animal sources the essential amino acids will not be available for growth and functioning of body cells; vitamin B₁ or thiamin bears a close relationship to the oxidation of carbohydrate foods, so the one whose activities are greater requires more of this vitamin.—Elizabeth C. Nickerson, B.S., C.P.H., Hartford, Conn.; The Conn. S. Med. Jour., Vol. 5, No. 1, January, 1941.

The statistician deals with averages; the physician with individuals.—Fetterman.

THE HEADQUARTERS HOTEL



THE PALMER HOUSE — CHICAGO

All meetings of Sections, General Sessions, House of Delegates, and all exhibits, both technical and scientific, will be housed in this hotel.

PRELIMINARY PROGRAM
OF THE

One Hundred First Annual Meeting

Illinois State Medical Society

PALMER HOUSE, CHICAGO

MAY 20, 21, 22, 1941



All Meetings On Daylight Saving Time

Our Second Hundred Years

IT is appropriate that the first convention to be held by our Society in its second hundred years should be located in Chicago, the largest city in the state. If the first hundred years were hard, the Local Committee on Arrangements is leaving nothing undone which might make the second hundred begin "with the greatest of ease."

Contrast the hardships of travel a hundred years ago with our present day streamlined trains and high powered automobiles gliding over wide paved highways. Consider the primitive lodging facilities available a century ago and compare them with the luxurious Palmer House of today. Imagine the difficulty of preparing a scientific program, and planning a legislative schedule which could solve the organization problems of an infant Society in 1840.

The Chicago Medical Society as convention host in 1941 invites every physician in Illinois to board one of these beautiful modern trains, or pilot his new high powered motor car right into Chicago on May 20th, register at convention headquarters at the Palmer House, and let the Program Committee take him in tow for the rest of the week.

Every convenience has been arranged, every wish anticipated. All convention activities are to be conducted under one roof, most of them on adjoining floors. When you register you will be right in the midst of a beehive of activity, the scientific and technical exhibits will be right at your elbow. The section meetings with their highly educational and interesting programs will literally surround you, beckoning you to come in and be kept as progressive and modern as the streamliner which brought you here. All convention activities are to be so concentrated as to give you a maximum of education and pleasure for a minimum of effort on

your part. All activities under one roof except the golf tournament! There are even several adequate preparatory stations here for that, so that if you visit them before entering the tournament you may be sufficiently mellow to at least sound sincere in your sympathy when the opponent's ball nestles itself in a fine deep trap.

Chicago hospitals and medical schools have arranged an elaborate program of Post-Convention Clinics for Friday and Saturday, so don't make any promises about coming home Thursday. Stay for the week. Concentrate on convention activities Tuesday, Wednesday, and Thursday and then spend Friday and Saturday in the clinics. Hospital activities will be curtailed during the convention, but on Friday and Saturday they will really show you the works.

Entertainments? Oh yes, you will be entertained. Alumni luncheons, Veterans' Dinner, Gold Tournament, President's Dinner, and Women's activities, both for medical women and physicians' wives and guests. At the President's Dinner we anticipate a guest speaker who is one of our leading statesmen — but more about that in the next issue of the Journal and in the official program.

Come to Chicago May 20th! Leave the details to us. Chicago Medical Society will not let you down. As your host we will give you a week full of activities made up of a mellow blend of just the proper amounts of education and entertainment. Come to the Convention and start the second hundred years right.

Local Committee on Arrangements
H. Prather Saunders,
Chairman
R. R. Ferguson
Robert H. Hayes

General Sessions

OPENING MEETING

Your attention is called this year to the unusually interesting programs which have been arranged, particularly those of the General Sessions. Every effort has been made to select subjects that will appeal to the general practitioner of medicine. The speakers are outstanding men from various parts of the United States and Canada.

The program for Thursday morning is fully as interesting as that for Wednesday morning. Since the hospitals will arrange clinics for Friday and Saturday, it is hoped that all members will plan not only to remain for the General Sessions on Thursday morning but also to stay over for the clinics.

TUESDAY AFTERNOON, MAY 20, 1941

- 1:00 Meeting officially opened by the President, James Scott Templeton, Pinckneyville.
 Invocation —
 Address of Welcome — Mayor of Chicago, or City Official. (To be announced)
 Address of Welcome — President, Chicago Medical Society, Frank F. Maple, Chicago.
 Report of Chairman, Committee on Arrangements, H. Prather Saunders, Chicago.
 Adjournment for scientific meetings.

TUESDAY EVENING, MAY 20, 1941

- 8:00 Oration in Medicine —
 "The Ageing Heart."
 John H. Musser, M.D., Professor of Medicine, Tulane University School of Medicine, New Orleans, Louisiana.
 9:00 Oration in Surgery —
 "The Role of the Surgeon in the Management of the Peptic Ulcer Problem."
 Owen H. Wangenstein, M.D., Professor of Surgery, University of Minnesota School of Medicine, Minneapolis, Minnesota.

WEDNESDAY AFTERNOON, MAY 21, 1941

- 1:30 President's Address — "Organization and Medicine"
 James Scott Templeton, Pinckneyville, President, Illinois State Medical Society.

THURSDAY MORNING, MAY 22, 1941

Induction of the President-Elect.

Immediately following the completion of the second session of the House of Delegates, the President-Elect, Charles H. Phifer, Chicago, will be inducted into the office of President of the Illinois State Medical Society by the retiring President, James S. Templeton.

All members and guests at the meeting are invited to attend this interesting function.

Joint Sessions

WEDNESDAY MORNING, MAY 21, 1941

Joint session of Sections on Medicine; Surgery; Public Health and Hygiene; Radiology; Pediatrics; Obstetrics and Gynecology.

- 9:00 "Tuberculosis: Its Two Clinically Demonstrable Phases of Development."

- C. A. Stewart, Minneapolis, Minnesota.
 9:30 "Anorexia Nervosa."
 Ray Farquharson, Toronto, Canada.
 10:00 "The Eye Problems in Graves' Disease."
 J. H. Means, Boston, Massachusetts.
 10:30 "Some Problems of the Biliary Tract."
 I. S. Ravdin, Philadelphia, Pennsylvania.
 11:00 "Diagnosis of Cancer of the Esophagus."
 J. B. Costen and W. T. K. Bryan, St. Louis, Missouri.

THURSDAY MORNING, MAY 22, 1941

- 9:00 "Osteoporosis and Its Relation to Systemic Disease."
 John D. Camp, Mayo Clinic, Rochester, Minnesota.
 9:30 "The Early Diagnosis of Malignant Tumors of the Female Genital Organs."
 Frank R. Smith, New York City, New York.
 10:00 "Some Problems of Water and Electrolyte Loss in Surgery."
 Frederick A. Collier, Ann Arbor, Michigan.
 10:30 "Susceptibility to Paralysis in Poliomyelitis."
 Lloyd Aycock, Boston, Massachusetts.
 11:00 "The Doctor and Coronary Disease."
 O. P. J. Falk, St. Louis, Missouri.

Section Programs

SECTION ON MEDICINE

Willard O. Thompson Chairman
 F. Garm Norbury Secretary

TUESDAY AFTERNOON, MAY 20, 1941

- 2:30 "Rat-Bite and Haverhill Fevers."
 Tom Kirkwood, Lawrenceville; and C. G. Stoll, Sumner.
 2:50 "Pathological Anatomy of Aspiration Bronchopneumonia."
 Carl Apfelbach, Chicago.
 3:10 "Aspiration Pneumonia."
 Ernest E. Irons, Chicago.
 3:30 "The Treatment of Hypertension with Potassium Sulfoeyanate."
 E. W. Cannady and Hollis N. Allen, East St. Louis.
 3:50 "Recent Progress in Estrogen Therapy."
 S. Charles Freed, Chicago.
 4:10 "Hemolytic Staphylococcus Septicemia."
 A. G. Wolfe, Jacksonville.
 4:30 "The Diagnosis of Carcinoma of the Colon."
 James T. Case, Chicago.
 (Discussion only by properly executed forms.)

WEDNESDAY MORNING, MAY 21, 1941

Joint session with Sections on Surgery; Public Health and Hygiene; Radiology; Pediatrics; Obstetrics and Gynecology.

(For Complete Program, See Joint Sessions.)

WEDNESDAY AFTERNOON, MAY 21, 1941

- 2:30 Chairman's Address.
 Willard O. Thompson, Chicago.
 2:50 "Recurring or Persistent Giant Urticaria (Angioneurotic Oedema)."
 Ray Farquharson, Toronto, Canada.
 3:10 "Theory and Prevention of Diabetes."
 R. T. Woodyatt, Chicago.
 3:30 "Observations on the Coronary Syndrome."
 Hermon H. Cole, Springfield.

- 3:50 "Sciatica."
A. Verbrugghen, Chicago.
- 4:10 "Pathogenesis of Subacute Bacterial Endocarditis."
H. D. Palmer, Rockford.
- 4:30 "Hypertension and Its Relation to Unilateral Kidney Disease."
B. C. Corbus and B. C. Corbus, Jr., Chicago.
(Discussion only by properly executed forms.)

THURSDAY MORNING, MAY 22, 1941

Joint session with Sections on Surgery; Public Health and Hygiene; Radiology; Pediatrics; Obstetrics and Gynecology.

(For Complete Program, See Joint Sessions.)

SECTION ON SURGERY

Charles L. Patton Chairman
Loyal Davis Secretary

TUESDAY AFTERNOON, MAY 20, 1941

Joint session with Chicago Society of Industrial Medicine and Surgery.

"Fractures of the Lower Forearm and Wrist."

Richard J. Bennett, Jr., Chicago.

The paper represents a series of fractures of the lower radius and ulna and the carpal bones over a five year period, 1936-1940 inclusive.

The fractures have been classified according to site and the treatment has been based upon the age of the patient with relation to the normal experimental healing of the bone.

Certain fundamental facts are brought out in relation to the early diagnosis and treatment of fractures of the carpal bones and suggestions as to how to avoid missing fractures of the carpal bones and, furthermore, how to avoid non-union.

"The Immediate Care of Industrial Injuries."

Thomas C. Douglass, Chicago.

Following the lead of the recent trend toward the elimination of antiseptics in the care of wounds, a plan has been devised for the care of injuries in widely separated locations. This plan requires that all wounds which penetrate the skin be covered with sterile dressings immediately and the employee sent to our dispensary or to a hospital where cleansing and primary closure may be accomplished in the best possible manner. Burns are handled in a similar fashion.

Fractures are splinted where they occur and are then transported by car or ambulance to the hospital for care.

"Blood Transfusion Reactions, their Causes and Prevention."

Leo M. Zimmerman, Harold Laufman and Anna Marie Strauss, Chicago.

An analysis is made of four series, each of 500 blood transfusions, demonstrating the reduction in the incidence of reactions as the several causative factors are eliminated. The organization of a Transfusion Department under unified responsibility is important. An adequate system of checks and counter-checks is described, together with record forms for the careful evaluation of the post-transfusion course. The value of the test for pyrogenic substances in determining the cause of reactions is emphasized.

"Bone Pain."

Graham Kernwein, Chicago.

The nerves supplying the skin are so educated that injuries to them are accurately located. Painful irritation of the viscera, however, finds expression not necessarily over the site of the organ but often in a remote painful area of the skin. The prevailing theory is that proposed by Ross and supported by Head. It describes two types of pain; splanchnic or visceral, and somatic or referred. Misinterpretation of referred pain in the abdomen results in many unnecessary operations, a fact often stressed. Diseases of bone may cause somatic pain, resulting in misinterpretation and unnecessary operation, a fact generally overlooked.

A series of illustrative cases will be presented.

"Fractures About the Elbow."

James J. Callahan, Chicago.

The elbow is the only true hinged joint in the skeleton. Thus injuries to any of the three bones that enter into the

formation of this joint frequently cause deformities and disabilities.

The elbow is accessible to direct and indirect trauma, thus resulting in varied and complicated fractures. An attempt will be made by illustration to review some of the most common types of fractures, and to discuss in detail the various forms of treatment.

"The Use of Injections for the Relief of Peripheral Pain and Other Conditions."

Frederick W. Slobe, Chicago.

Since treatment of the remote cause of various painful affections of muscles, facias, ligaments, and nerves is often unsatisfactory, local therapeutic injections are often of distinct benefit. Some of the prolonged acting anesthetics and some of the volatile preparations are especially useful for this purpose. This has a rather wide range of applicability in low back pain and includes the use of paravertebral injections in certain instances. The use of injections for the relief of severe intercostal neuralgia is often of marked benefit. Temporary blocking of the abdominal sympathetic ganglia by paravertebral injections seems to afford definite improvement in some cases of thrombophlebitis. Direct injection of various agents into local areas of fibrositis in various parts of the body is of frequent value in eliminating reflex pains referred to other areas.

"Repair of Indirect Inguinal Hernia through Low Midline Incision."

W. Kenneth Jennings, Evanston.

Hendrey recently reported a case of femoral hernia repaired after exposure of the femoral ring through a low midline incision. He separated the peritoneum from the rectus muscle and retracted the muscle laterally to obtain excellent exposure of the femoral canal without entering the peritoneal cavity and without injury to the abdominal wall in the inguinal sector. Anatomic studies have shown that the abdominal inguinal ring can likewise be exposed by this same technic. Inasmuch as the great majority of recurrent inguinal herniae are in reality incisional herniae, it was reasoned that if an indirect inguinal hernia could be removed and the abdominal inguinal ring closed without traumatizing the inguinal wall, the risk of recurrence of the hernia should be minimal. Accordingly a technic was devised in which Hendrey's approach was used. The indirect hernial sac was delivered from the canal from behind (posterior to the transversalis fascia) as is illustrated in the drawings. After removal of the sac the abdominal inguinal ring was covered by transversalis fascia and muscle fibers, using two or three interrupted silk sutures. The midline incision is then closed. Eight patients have been operated upon to date; three were operated one year ago, one eleven months, one nine months and the last three within the last six months. All have been carefully followed and as yet there have been no recurrences. This procedure is recommended for consideration in cases of indirect inguinal hernia where no previous injection therapy has been attempted.

WEDNESDAY MORNING, MAY 21, 1941

Joint session with Sections on Medicine; Public Health and Hygiene; Radiology; Pediatrics; Obstetrics and Gynecology.

(For Complete Program, See Joint Sessions.)

WEDNESDAY AFTERNOON, MAY 21, 1941

"The Role of the Peritoneoscopy in Abdominal Surgery."

J. C. Thomas Rogers, Urbana.

Direct visualization of the abdominal cavity by means of the introduction of a small instrument through a tiny incision very frequently gives sufficient information to forestall more radical surgery. This diagnostic procedure is sufficiently safe to be added to the armamentarium of the experienced abdominal surgeon. Indications and contra-indications along with technic is also presented.

"Acute Perforation of Gastric and Duodenal Ulcer."

(An analysis of 200 consecutive cases.)

John B. O'Donoghue and Maurice B. Jacobs, Chicago.

From a study of 200 consecutive operated cases of acute perforation of gastric and duodenal ulcers observed at the Cook County Hospital from January 1, 1935 to June 1, 1937; an analysis of sex, race, and age incidence are made; also the past ulcer histories and the previous surgical treatment some of this series had undergone.

The symptomology, physical examination, and laboratory findings are analyzed; also the type and location of the perforation revealed at operation.

The relationship of the perforation to the mortality rate is correlated with the time interval elapsing, operative procedure, and type of perforation found.

In conclusion: The immediate postoperative treatment and course are considered.

"Surgical Treatment of Carcinoma of the Rectum."

R. K. Gilchrist, Chicago.

This is a discussion of the value of the usual prognostic signs; age of patient, the size of tumor, the duration of symptoms, grading of tumor, and the presence of palpable lymph nodes in cancer of the large bowel. The incidence and extent of lymphatic metastases in 150 specimens of carcinoma of the colon is demonstrated and the general principles of surgical treatment, as influenced by these findings, are discussed.

"Congenital Hemolytic Jaundice."

Charles D. Branch, Peoria.

Haden has shown that spherical red blood cells are alone responsible for the fragility changes seen in the blood of these individuals. Krumbhaar therefore suggests the name spherocytic jaundice. Five cases of spherocytic jaundice are reported. The patients are members of the same family. All in this group had the characteristic finding of a chronic variable jaundice, splenomegaly and spherical red cells. The operative findings and pathological descriptions are presented. The treatment of spherocytic jaundice is discussed.

"Factors Influencing the End Results of Surgery for Duodenal Ulcer."

J. R. Buchbinder, Chicago.

The indications for surgery in duodenal ulcer are no longer a matter for debate. In this country there is a steadily decreasing difference of surgical opinion relative to the most satisfactory operative procedure. Gastro-enterostomy, simple excision, and pyloroplasty are steadily giving way to wide gastric resection. Recurrence and marginal ulceration follow in large percentages in young individuals, cases with high acid, bleeding, penetration, and long-standing intractability where gastro-enterostomy is performed. Sharp reduction in acidity and rapid emptying are essential for permanent relief and are not assured by conservative operative procedures. Certain points pertaining to technic are of utmost importance for satisfactory end results.

"Volvulus of the Cecum and Torsion of its Mesentery."

R. M. Norris, Jacksonville.

A brief review of the literature relating to the incidence and etiological and embryological factors in the production of the cecum and torsion of its mesentery. Report of case which occurred during pregnancy in which the uterus was the primary factor in producing the volvulus. Outline of treatment employed.

"Granulomatous Lesions of the Ileo-Cecal Region."

Foster L. McMillan, Chicago.

Granulomatous lesions of the ileocecal region may be divided into two main groups: specific and non-specific. The specific granulomas produced by tuberculosis, actinomycosis, and amoebiasis are reviewed with illustrations. The non-specific granulomas of this region are likewise reviewed and illustrated with particular attention given to regional enteritis and its different phases.

"Surgery of the Aged."

E. Lee Strohl, Chicago.

Within the past thirty years pediatrics has been elevated to a highly developed scientific and economically important specialty. On the contrary geriatrics has been allowed to lag.

In 1850, 2.6% of the inhabitants of the United States were over 65. In 1931, 5.4% of the inhabitants of the United States were over 65. Factors to account for this shift include (1) a better knowledge of physiology, physiological chemistry, pathology, and surgical technic, and (2) development of anesthesia and methods of antiseptics.

These ideas are developed and a survey of the accepted means of determining poor surgical risks is included. A few case reports illustrative of certain fundamental points are included.

THURSDAY MORNING, MAY 22, 1941

Joint session with Sections on Medicine; Public Health and Hygiene; Radiology; Pediatrics; Obstetrics and Gynecology.

(For Complete Program, See Joint Sessions.)

THURSDAY AFTERNOON, MAY 22, 1941

The program of this session will be devoted to the demonstration of patients and methods.

"Physiological Problems in Suction Drainage of the Gastro-Intestinal Tract." (An actual demonstration of how this is done.)

John L. Lindquist, Chicago.

Constant suction drainage of the gastro-intestinal tract for prolonged periods is often necessary. It should be borne in mind that this drainage accomplishes only one thing, relief of distention. At the same time prolonged drainage creates or exaggerates certain abnormal physiological states which may become as serious as distention. With the tube in place intake and absorption from the gastro-intestinal tract are hindered and the actual loss of water, minerals, and nutritive elements may be much greater than would occur without drainage. The management of these problems on the Surgery III Service of St. Luke's Hospital is discussed. Slides to illustrate the clinical water balance sheet used and the treatment of negative fluid balance with special consideration to renal disease and serum protein deficiency are included. The practical evaluation of the patient's status with reference to water, mineral, and nutrition balance is considered. The practical laboratory tests which are helpful are discussed. The actual hospital management is illustrated by a case of pyloric obstruction in which gastro-enterostomy was done. The stoma closed on the ninth postoperative day necessitating prolonged gastric drainage. Blood chemistry studies and the fluid balance sheet indicate the patient's condition and the effect of physiologic management.

"Treatment of Burns." (Use of non-adherent dressings.)

Harvey S. Allen, Chicago.

At the Children's Hospital of the Cook County Hospital, between one hundred twenty to one hundred fifty burned patients are seen each year. During the past two years all burns have been treated with a non-adherent type of dressing.

The burns are considered as large open surgical wounds and are treated with the same principles as are applied to any open wound. The value of cleanly care, closure of the burned area with non-adherent dressing, splinting, and early grafting is shown in the steadily diminishing mortality rate.

"Prolongation of Survival Time in Mann-Williamson Dogs by Supplementing Diet with Amino Acids."

Samuel J. Fogelson, Chicago.

In our laboratories the average survival time for internal duodenal drainage or Exalto-Mann-Williamson dogs on a basal diet supplemented with casein was one hundred plus days. Another series of these animals were placed on the same basal diet but received a supplement of a preparation containing all the essential amino acids in amounts which were nitrogen equivalent to the casein supplement of the first series. In this second series the average survival time was two hundred plus days. This permitted the conclusion that improved nutrition with ease of assimilation of diet are significant factors in experimental ulcer.

"Paravertebral Alcohol Injection for Relief of Cardiac Pain."

Samuel Perlow, Chicago.

Since 1916 numerous surgical procedures involving the autonomic nervous system have been advocated for the relief of cardiac pain, especially those severe cases of angina pectoris not relieved by medical measures. Chemical destruction of the sympathetic pathways from the heart by means of paravertebral alcohol injection has given either complete or partial relief to 75% of cases of angina pectoris so treated.

"Varicose Veins and their Complications."

Richard E. Heller, Chicago.

This paper covers the modern concepts of the pathological anatomy and physiology of varicose veins and their complications. New information is presented regarding the circulation in varicosities. A synopsis of the treatment is given. The healing of varicose ulcers has been studied to establish a standard healing curve by which to judge newer modes of therapy.

"Spontaneous Hemorrhage into the Rectus Sheath."

Everett P. Coleman and D. A. Bennett, Canton.

Spontaneous hemorrhage into the rectus sheath is of relatively rare occurrence. It has been reported in only a few instances, but when it does occur it produces symptoms of a confusing nature and may be mistaken for strangulated hernia or other conditions suggesting a surgical emergency. A review of the literature is given, the pathology is discussed, and one additional case is reported.

"Vitamin K in Hypoprothrombinemia."

John E. Karabin, Winnetka.

Synthetic compounds with vitamin K activity used orally and parenterally are effective in surgical patients with hypoprothrombinemia. Hypoprothrombinemia may occur with or without jaundice with or without bleeding, and no definite relationship between the degree and duration of jaundice may be made.

Dangerous levels may occur in biliary tract, hepatic or gastro-intestinal disease. Postoperatively the 4th to the 7th day is the critical period when the plasma prothrombin may reach a dangerous level.

The average dose of vitamin K is 1-3 mgs. daily, orally or parenterally. When oral therapy is used it is necessary that bile salts are present in the intestinal tract to insure absorption of the oil soluble vitamin.

The dosage will vary with the individual and will depend upon repeated prothrombin determinations. Clinically patients with severe damage of the liver did not give as good a response to the vitamin K compounds or maintain the level of plasma prothrombin as well as patients with relatively good liver function.

"Radium Treatment of Carcinoma of the Tongue."

Frank E. Simpson, J. Ernest Breed and James E. Thompson, Chicago.

Methods of using radium are (1) surface irradiation, and (2) radium puncture.

Surface irradiation is successful in small, radiosensitive lesions only. Radium puncture must be used as adjunct.

Methods: (1) Temporary radium or radon needles. These are removed after dose has been given. We have long since abandoned their use. (2) Permanent radon "seeds." These may be made of glass, gold, lead, etc. We use lead radon "seeds" which we devised in 1930.

Radium treatment of metastases: Surgery combined with radiation is method of choice. Report of 56 cases.

SECTION ON EYE, EAR, NOSE AND THROAT

Thomas D. Allen Chairman
Clifton S. Turner Secretary

TUESDAY MORNING, MAY 20, 1941 Crystal Room, Palmer House

9:00 "Endoscopy in the Diagnosis of Diseases of the Chest."

Stanton A. Friedberg, Chicago.

Bronchoscopy and esophagoscopy are no longer procedures confined merely to the removal of foreign bodies from the air and food passages. The rapid and efficient progress made by thoracic surgeons in recent years carries an added necessity for the early diagnosis of such previously considered hopeless conditions as pulmonary and esophageal carcinoma. A series of lantern slides will be presented to illustrate the important and indispensable role of endoscopy in the diagnosis and treatment of chest diseases.

Discussion opened by John M. Dorsey, Chicago.

9:30 "The Treatment of Hereditary Glaucoma."

Walter Ackerman, Chicago.

The treatment of glaucoma is a veritable Scylla and Charybdis in ophthalmology. On the one hand we have enthusiasts for medical treatment only. On the other hand we have enthusiasts for surgical treatment.

The present study shows the necessity of pursuing a middle course in individualizing and of making a thorough study of each individual case. The earlier that treatment is started the better; this means a thorough study of all members of the family.

Discussion opened by Samuel J. Meyer, Chicago.

10:00 "Vasomotor Rhinitis: A Physiologic and Pathogenetic Basis for Therapy."

Louis Fishman, Chicago.

The cases selected for treatment are non-suppurative, perennial types, which include those of allergic, psychoneurotic and possibly endocrine origin, and especially exclude seasonal (Hay Fever) cases. Successful results are independent of degenerative changes of the nasal mucosa. Relief of sneezing (hyperesthesia), hypersecretion (rhinorrhea) and nasal blockage (intumescence) is experienced within a few days and is of considerable but variable duration. Though this form of therapy is empirical in the sense that it disregards etiologic factors, its effectiveness is readily evaluated on the basis of physiologic facts. The apparatus consists of cotton, a firm metal applicator, and a solution of 5 percent cocaine hydrochloride. The procedure is harmless.

10:30 "Squint and Amblyopia; A Plea for their Early Treatment."

Hallard Beard, Chicago.

The more important methods in the treatment of squint and its attending weakness of sight are: Surgery of the ocular muscles, the fitting of glasses, orthoptic exercises and occlusions.

Many or all of these are commonly neglected in their application to cross-eyed children, due to some prevalent, erroneous conceptions of squint on the part of general practitioners. The importance of instituting treatment in the first two or three years of life is stressed.

Discussion opened by W. A. McNichols, Dixon.

11:00 "Conservative Management of the Sinuses."

Louis T. Curry, Chicago.

Cooperation with the tendency of less sinus surgery is urged. Basic physiological, anatomical and pathological considerations of the nose and accessory sinuses are reviewed.

Fundamentals for diagnosis of sinus disease are outlined and conservative treatment is discussed.

With more universal standards of diagnosis and with fewer major sinus operations the confidence of the general practitioner and the public may be elevated.

Discussion opened by R. W. Watkins, Chicago.

11:30 Chairman's Address.

Thomas D. Allen, Chicago.

TUESDAY AFTERNOON, MAY 20, 1941 Crystal Room, Palmer House

2:00-5:00 "Symposium on Nutrition."

Beulah Cushman, Chicago.

Physiological Aspects of Normal Nutrition as related to Eyes, Ears, Nose and Throat.

Smith Freeman, Department of Physiology, Northwestern University, Chicago.

Effect of Pathological Processes on Nutritional Requirements.

Clifford Barborka, Department of Internal Medicine, Northwestern University, Chicago.

Clinical Aspects of Vitamin Deficiencies in the Ear, Nose and Throat.

Linden Wallner, Rush Medical College, Chicago.

Clinical Aspects of Vitamin Deficiencies in the Eye.

Peter Kronfeld, Dean Illinois Eye, Ear Infirmary, Chicago.

Problems in Nutrition as Result of Allergy.

Helen Hayden, Children's Memorial Hospital, Chicago.

TUESDAY EVENING, MAY 20, 1941 Palmer House

6:00 Annual Banquet of the Section.

"Progress in Color Photography."

C. O. Schneider, Chicago.

WEDNESDAY MORNING, MAY 21, 1941 Crystal Room, Palmer House

9:00 "Ophthalmology Under Field Conditions."

Roland I. Pritikin, Chicago.

The author describes the organization of the ophthalmic service of a field force and care of eye injuries at the place of injury, and subsequently. Problems of ophthalmic service in the field, administration, staff relationship, hospitalizations and evacuations of ophthalmic casualties, equipment and supply are discussed. Hygiene, first aid and treatment in the theater of operations, with emphasis on preventive treatment and measures against trachoma and dust is described. Movies of ophthalmic surgery on a large scale under field conditions in India are shown.

Discussion opened by E. Mann Hartlett, Evanston.

9:30 "Laryngo-tracheobronchitis."

Charles D. Sneller, Peoria.

10:00 "Non Industrial Eye Injuries."

Hiram J. Smith and H. V. Wadsworth, Chicago.

We will call attention to the fact that industrial eye injuries follow rather definite patterns; and prevention of industrial injuries is therefore reasonably successful.

The authors will attempt to show that non-industrial eye injuries do not follow any definite pattern. Four unusual cases are reported. Prevention of non-industrial injuries is much more difficult, but can be effected to some extent thru education.

10:30 "Invasion of the Venous Sinuses from Suppuration in the Middle Ear Cell System."

John R. Lindsay, Chicago.

The spread of otitic suppuration to the venous sinuses bordering on the temporal bone has always carried a fairly high mortality even with the best known surgical treatment.

The objective of this paper is to present new material both clinical and pathological, which provides some of the explanations for failure in diagnosis and treatment. The material includes several examples of spread from the petrous pyramid to the petrosal sinuses with and without jugular bulb or sigmoid sinus thrombosis, also localized cisternal meningitis and extension to the superior sagittal sinus.

Several cases will be presented to illustrate the relative place of chemotherapy and surgery in treatment of this complication.

11:00 "Presbyopia."

Ralph H. Woods, LaSalle.

Accommodative insufficiency may occur in childhood, youth, adolescence, as well as in senility.

Amplitude of accommodations should be measured in every case before cycloplegic is used.

Methods of measurement, tape measure, Prince rule, Ampliometer.

Presbyopic comfort depends on two primary factors: (1) One diopter reserve accommodation, (2) Scales centered nasally to secure nykinesia.

Ampliometer as aid in securing presbyopic correction and determining reserve convergence.

Discussion opened by A. H. Pember, Janesville, Wisconsin.

11:30 Business Meeting.

WEDNESDAY AFTERNOON, MAY 21, 1941

Crystal Room, Palmer House

INSTRUCTION COURSES

Ophthalmology.

2:00 "Information Please — Cataract Surgery."

Watson W. Gailey, Bloomington.

Walter Stevenson, Quincy.

Samuel J. Meyer, Chicago.

Frank W. Brodrick, Sterling.

3:30 "Neuro-ophthalmology."

Max M. Jacobson, Chicago.

Neuro-perimetry, a subdivision of Neuro-ophthalmology, will be presented in essential detail; a complete necessary reference list will be given; its importance as a "connecting link" between Neurology, Ophthalmology, Neuro-surgery and Internal Medicine will be shown. A careful analysis of the anatomy of the central visual pathways, its anatomical relations and localization of the constituent nerve fibers will be discussed, aided by the projection of pictures and diagrams. The clinical application of the knowledge of the anatomy of the central visual pathways will be presented. Certain localizing phenomena of cerebral import will be considered.

The anatomy of, lesions of, and examination of the pupillo-motor pathways will be discussed.

Dining Room No. 11 Palmer House

Otolaryngology.

2:00 "Panel Discussion on Tumors of the Head and Neck."

Joseph C. Beck, Chicago.

There will be a panel discussion on tumors of the head and neck with particular emphasis on questions from the floor. Brief introductory presentations will deal with problems of ophthalmology, otolaryngology, oral and plastic surgery and radiotherapy. It is expected that participation from the floor will constitute an important phase of the program.

3:30 "Nose and Throat Diseases Related to Various Lesions of the Eye."

James B. Costen, St. Louis, Missouri.

Accepting the preponderance of opinion against the rela-

tionship of sinus disease to retrobulbar neuritis, there still remains a most important relationship between foci in sinuses and lymphoid tissue of the throat, to retinal lesions, choroiditis, and uveitis. Favorable results will be shown in a few cases of retrobulbar neuritis after sinus surgery. One case will be presented, showing only marked allergy, polyposis about the ethmoids and no infection, improvement of a hemorrhagic retinitis beginning after sinus surgery.

The coincidence of abnormal variation in sphenoidal cell structure and of headache in the majority of these eye cases will be illustrated.

SECTION ON PUBLIC HEALTH AND HYGIENE

N. O. Gunderson Chairman

Walter C. Earle Secretary

TUESDAY AFTERNOON, MAY 20, 1941

Palmer House

Demonstration of technics and tests with their interpretation, commonly employed in Public Health Work.

"Schick Test."

Henry Niblack and Israel Appelbaum, Chicago.

"Tuberculin Test."

Sol Rosenthal, Chicago.

"Dick Test."

Gladys Dick, Chicago.

"Rabies."

Harald Johnson, Montgomery, Alabama.

Discussion opened by H. J. Shaughnessy, Ph.D., Chicago.

"Technics in Syphilis — Diagnosis and Treatment."

Samuel J. Hoffman, Chicago.

a. Drawing blood for diagnostic tests in infants.

b. The technic of administration of antiluetic drugs.

WEDNESDAY MORNING, MAY 21, 1941

Joint session with Sections on Medicine; Surgery; Radiology; Pediatrics; Obstetrics and Gynecology. (For Complete Program, See Joint Sessions.)

WEDNESDAY AFTERNOON, MAY 21, 1941

"Cancer Control in Illinois."

R. V. Brokaw, Chicago.

Discussion opened by Erich Uhlman, Chicago and Roswell T. Pettit, Ottawa.

"Are Present Quarantine Regulations Archaic?"

Archibald Hoyne, Chicago.

Discussion opened by Winston H. Tucker, Evanston.

"The Epidemiology of the Manteno State Hospital Typhoid Fever Epidemic."

C. Milton Eberhart, Chicago.

"The Five Day Treatment of Early Syphilis."

Herbert Rattner, Chicago.

Discussion opened by Herman Soloway, Springfield.

THURSDAY MORNING, MAY 22, 1941

Joint session with Sections on Medicine; Surgery; Radiology; Pediatrics; Obstetrics and Gynecology. (For Complete Program, See Joint Sessions.)

SECTION ON RADIOLOGY

Harry W. Ackemann Chairman

Earl E. Barth Secretary

TUESDAY AFTERNOON, MAY 20, 1941

Palmer House

2:30 "Tumors Occurring in the Apex of the Lung."

Justin J. Stein, Hines.

Although many articles concerning carcinoma of the lung have recently appeared in the literature, there has been little consideration accorded tumors situated in the apex. The clinical radiological and pathological features of apical tumors will be presented as well as a resume of the literature and the author's experience with a large group of cases. Lantern slides will be shown.

Discussion opened by T. J. Wachowski, Chicago.

2:50 "Roentgenographic Considerations of Some Aspects of Chronic Mastoiditis with Special Reference to Cholesteatoma."

John H. Gilmore and L. D. Urban, Chicago.

1. What is chronic mastoiditis?
2. Post-inflammatory changes in mastoid structures.
 - a. Sclerosis — various degrees.
 - b. The undeveloped mastoid — considerations.
 - c. Acute infection superimposed on chronic.
3. Localized pathologic change in the mastoid process.
 - a. Chronic abscess formation.
4. Cholesteatoma.
 - a. Pathology and complications.
 - b. Symptoms.
 - c. Roentgenographic evidence of
 1. Classical.
 2. Obscure in lateral position.
 3. Use of the Chamberlain-Towne position.

Discussion opened by Fred H. Decker, Peoria.

3:10 "Diagnostic Value of the Plain (Scout) Film of the Abdomen in Acute Conditions."

Wm. DeHollander, Springfield.

Discussion opened by B. C. Cushway, Chicago.

3:30 "The Role of the Roentgenologist in the Treatment of Fractures."

Ralph G. Willy, Chicago.

The radiologist, as medicine is practiced today, is the consultant in most fractures. He is responsible for the diagnosis, and frequently for the end result. He must recognize the capabilities of the referring physician, and may have to insist upon a competent orthopedic surgeon being called in on consultation. He is in a position to suggest or demand frequent check-up examinations. At the same time he must give all available information by films made in various standard or unusual positions.

Discussion opened by Caesare Gianturco, Urbana.

3:50 "Film reading session."

This session is open to all members of the State Society. The officers of the Section on Radiology are anxious to have as many members of the Society as possible participate. Anyone wishing to present interesting and unusual roentgenograms should communicate with the Secretary of the Section.

5:00 Fellowship Hour.

Courtesy of Chicago Roentgen Society.

6:00 Radiological Dinner.

Business meeting and election of officers.

WEDNESDAY MORNING, MAY 21, 1941

Joint session with Sections on Medicine; Surgery; Public Health and Hygiene; Pediatrics; Obstetrics and Gynecology.

(For Complete Program, See Joint Sessions.)

THURSDAY MORNING, MAY 22, 1941

Joint session with Sections on Medicine Surgery; Public Health and Hygiene; Pediatrics; Obstetrics and Gynecology.

(For Complete Program, See Joint Sessions.)

SECTION ON PEDIATRICS

Orville E. Barbour Chairman
Craig D. Butler Secretary

TUESDAY MORNING, MAY 20, 1941

Palmer House

9:30 "Comments on the Early Diagnosis and Treatment of Anterior Poliomyelitis."

Arthur J. Fletcher, Danville.

"An Analysis of Pneumonia in Infants Observed in the Cook County Hospital in the Winter of 1941."

Joseph Greengard, Chicago.

"Vitamin K — Its Use in Pediatric Practice." Henry G. Poncher, Chicago.

"Present Practice of Immunologic Procedures in Communicable Diseases of Childhood." Frederick H. Maurer, Peoria.

"Diaphragmatic Hernia."

John M. Dorsey, Chicago.

TUESDAY AFTERNOON, MAY 20, 1941

2:30 Panel Discussion.

"The Thyroid in Childhood."

Anton J. Carlson

Margaret M. Knude, Chicago

Howard G. Swann

I. Pat Bronstein, Chicago

Helmut P. Seckel, Chicago

WEDNESDAY MORNING, MAY 21, 1941

Joint session with Sections on Medicine; Surgery; Public Health and Hygiene; Radiology; Obstetrics and Gynecology.

(For Complete Program, See Joint Sessions.)

THURSDAY MORNING, MAY 22, 1941

Joint session with Sections on Medicine; Surgery; Public Health and Hygiene; Radiology; Obstetrics and Gynecology.

(For Complete Program, See Joint Sessions.)

SECTION ON OBSTETRICS AND GYNECOLOGY

Herbert E. Schmitz Chairman
Milton E. Bitter Secretary

WEDNESDAY MORNING, MAY 21, 1941

Joint session with Sections on Medicine; Surgery; Public Health and Hygiene; Radiology; Pediatrics.

(For Complete Program, See Joint Sessions.)

WEDNESDAY AFTERNOON, MAY 21, 1941

CASE REPORTS.

"Bilateral Oophorectomy in Early Pregnancy."

Worling R. Young, Geneseo.

"An Ovarian and Interstitial Ectopic Pregnancy and Present the Specimens."

A. J. Kobak, Chicago.

"A Twin Interstitial Ectopic Pregnancy."

E. W. Fischmann, Chicago.

"A Series of X-Ray Pictures of a Dicephalic Monstrosity In-Utero."

F. H. Falls, Chicago.

"The Management of Sterility Problem in Private Gynecological Practice."

Willard C. Scrivner, East St. Louis.

The paper contains a resume of private patients, presents problem of sterility, the duration of the complaint varies from a few months to sixteen years.

Highly technical and theoretical thoughts are avoided in this paper. It is aimed to help the general practitioner manage the problem which is of increasing importance in many angles both domestic and national.

"Cervical Polyps."

William B. Serbin, Chicago.

Cervical polyps are usually benign. Occasionally pathologic changes and even malignant changes occur in the polyp or at its base. Inasmuch as the general public appreciates periodic health examinations, here an opportunity presents itself for looking for early malignant changes. The mere removal of a cervical polyp as an office procedure should be meticulously carried out and the base of the polyp properly treated. All material removed should be sent for microscopic examination and the patient followed up for possible malignant change. A technic for removal is presented together with some case reports and slides of pathologic material.

"The Climacteric and Menopause."

Edwin N. Nash, Galesburg.

The life of woman is divided into three sections.

(a) Growth period.

(b) Maturity or the Menacme.

(c) Senescence.

Retrogressive changes in pelvic organs.

Changes in function of endocrine gland — clinical manifestation.

(a) General.

(b) Cessation of menstruation.

(c) Local pelvic symptoms.

Diagnosis:

(a) Pre and post menopausal hemorrhage.

Management:

1. General.

(a) Rest.

(b) Exercise.

(c) Recreation.

(d) Mental occupation.

(e) Nutrition.

2. Specific.

(a) Endocrine.

Can we demonstrate efficiency beyond peradventure?

"Postmenopausal Bleeding."

Clyde J. Geiger, Chicago.

The cases of vaginal bleeding that occurred after the menopause at the Cook County Gynecological tumor clinic have been studied. They include carcinoma of the cervix and cervical stump, carcinoma of the fundus, cervical polyps, senile vaginitis, etc. The time of appearance of bleeding after the menopause, the length of time before consulting a physician were studied. The age, parity and associated symptoms were analyzed. The malignant lesions were classified.

RULES GOVERNING PRESENTATION OF PAPERS

"All papers read by members shall be limited to twenty minutes, and remarks in discussion to five minutes, floor privilege being allowed only once for the discussion of any one subject.

"All papers read before the Society or any of its Sections shall become the property of the Society. Each paper shall be deposited with the Secretary of the Section when read and the presentation of a paper to the Illinois State Medical Society shall be considered tantamount to the assurance on the part of the writer that such paper has not already appeared and will not appear in medical print before it has been published in the Illinois Medical Journal.

"A paper not heard in its scheduled turn shall be held subject to call of the Chairman of the Section at the end of the regular session if time permits, or as an alternative at the end of the program.

"All discussions shall be confined strictly to the subject in hand.

"No paper shall appear in the printed transactions of the meeting unless read in full or in abstract."

(From By-Laws of Illinois State Medical Society.)

Programs of Special Organizations

SECRETARIES' CONFERENCE

A. R. Bogue, Chairman Rochelle
 Carl E. Clark, Vice-Chairman Sycamore
 Roswell T. Pettit, Secretary Ottawa

TUESDAY EVENING, MAY 20, 1941

6:00 Dinner Meeting.

"The Selective Service System as it Affects the Practice of Medicine, and the National Defense in Illinois."

Robert A. Bier, M.D., Captain, Medical Corps, Medical Division, Selective Service System, Washington.

Dr. Bier, in this address, will give information concerning the role of medicine in our national defense, and will give much information which will be of interest to medical societies, their officers, committees and individual members.

"Social Security Clients."

Charles H. Phifer, M. D., President-Elect, Illinois State Medical Society, Chicago.

Dr. Phifer, as Chairman of the Medical Advisory Committee to the Division of Old Age Assistance, Illinois Department of Public Welfare, and through his associations during recent years with the Illinois Emergency Relief Commission and its work in Cook County, will tell about present plans to improve the medical care for social security clients, and of recent conferences of his committee with the officials of this State Division. This discussion will be of interest to all physicians who have participated in the programs to give medical care to these people, and who realize that up to now, the plans have not been entirely satisfactory.

MEDICAL WOMEN'S ASSOCIATION

TUESDAY, MAY 20, 1941

Palmer House

12:15 Luncheon of Welcome. (\$1.25)

Hostess: Branch No. 2 American Medical Women's Association.

Program to be announced later.

All medical women are urged to be present.

Lucille Snow, President,

1320 North Ashland Avenue, Wilmette.

WEDNESDAY, MAY 21, 1941

Palmer House

8:00 A. M. Defense Breakfast. (75c)

Courtesy Illinois State Medical Society to women members of the society.

PROGRAM

American Women's Hospitals in Defense Program.

Esther P. Lovejoy, Chairman Executive Board American Women's Hospitals, Medical Service Committee, American Medical Women's Association, Inc., 50 West 50th Street, New York City, New York.

Women in the Defense Program.

Elizabeth R. Miner, Honorary President, Branch No. 17, American Medical Women's Association, Macomb.

Women and War.

Eva M. Wilson, State Reformatory for Women, Dwight.

Public Health in the Defense Program.

Grace Wightman, Chief, Division Child Hygiene and Public Health Nursing, Department of Health, Springfield.

Children in the Defense Program.

Marion K. Bowles, President of Board, Junior College, Joliet.

Non-members are cordially invited.

Carroll L. Birch, President.

Branch No. 17, American Medical Women's Association,

1853 West Polk Street, Chicago.

WEDNESDAY, MAY 21, 1941

Palmer House

6:00 P. M. Reception for all women physicians preceding President's Dinner at 7:00 P. M.

Tables reserved for women physicians at the President's Dinner.

Bertha Van Hoosen, Chairman
Committee for Entertainment,
Medical Women.

ILLINOIS SOCIETY OF PATHOLOGISTS

Perry J. Melnick, Chairman, Program Committee ..
..... Chicago

TUESDAY MORNING, MAY 20, 1941

- 9:00 "Changes in the Blood Cells of Diagnostic and Prognostic Value."
Raphael Isaacs, Ann Arbor, Michigan.
- 9:30 "Clinical Pathological Conference."
S. A. Levinson, Chicago.
- SYMPOSIUM — THE ROLE OF PATHOLOGY
IN MEDICINE
- 10:30 "The Role of Pathology in Internal Medicine."
M. Herbert Barker, Chicago.
- 11:00 "The Role of Pathology in Surgery."
R. Bruce Malcolm, Chicago.
- 11:30 "The Role of the Pathologist in the Manage-
ment of Cancer."
James P. Simonds, Chicago.

PHYSICIANS' ASSOCIATION DEPARTMENT OF PUBLIC WELFARE STATE OF ILLINOIS

George L. Perkins President
J. W. Klapman Secretary-Treasurer

TUESDAY MORNING, MAY 20, 1941

- 9:00-12:00
"Electrocardiogram During Experimentally In-
duced Convulsive Seizures."
A. A. Lieberman and E. Liebert, Elgin.
"Electrically Induced Grand Mal."
J. V. Edlin, Chicago.
- "The Role of Dilantin in Epilepsy."
S. D. Klow, Jacksonville.
- "The Paretic Convulsion With Special Refer-
ence to its Control With Dilantin."
L. H. Eisendorf, East Moline.
- "The Problem of Chronic Alcoholism in State
Hospitals."
R. Novick, Manteno.
- "The Significance of Religious Preoccupation
in Prepsychotic Period of Schizophrenia."
M. Urist and L. B. Shapiro, Manteno.

CHICAGO SOCIETY OF INDUSTRIAL MEDICINE AND SURGERY

Roland A. Jacobson, President Chicago
Thomas C. Browning, Vice-President Chicago
Frank P. Hammond, Secy.-Treasurer Chicago

TUESDAY MORNING, MAY 20, 1941

- 9:00 Davis & Geck Movie.
- 9:30 "Skin Lesions of the Hand."
Theodore Cornbleet, Chicago.
- 10:00 "Fractures of the Pelvis."
George L. Apfelbach, Chicago.
- 10:30 "X-ray Surveys of the Tuberculosis Chest in
Industry."
Hollis E. Potter, Chicago.

- 11:00 "Disqualifying Conditions in Pre-employment
Examinations."
James A. Valentine and Joseph H. Thomas,
Chicago.

TUESDAY AFTERNOON, MAY 20, 1941

- Joint Session With Section on Surgery.
"Fractures of the Lower Forearm and Wrist."
Richard J. Bennett, Jr., Chicago.
- "The Immediate Care of Industrial Injuries."
Thomas C. Douglass, Chicago.
- "Blood Transfusion Reactions, their Causes and Pre-
vention."
Leo M. Zimmerman, Harold Laufman and Anna Marie
Strauss, Chicago.
- "Bone Pain."
Graham Kernwein, Chicago.
- "Fractures About the Elbow."
James J. Callahan, Chicago.
- "The Use of Injections for the Relief of Peripheral
Pain and Other Conditions."
Frederick W. Slobe, Chicago.
- "Repair of Indirect Inguinal Hernia through Low
Midline Incision."
W. Kenneth Jennings, Evanston.

VETERANS' SERVICE COMMITTEE DINNER

TUESDAY EVENING, MAY 20, 1941

The annual dinner of the Veterans' Service Com-
mittee will be held on Tuesday Evening, May 20,
at 6:00 P.M.

Dr. F. O. Fredrickson, Chairman of the Committee,
will officiate as the presiding officer.

PROGRAM

1. Presentation of Colors —
2. Bugle: To the Colors —
3. "Selective Service, What It Is and What It Means."
Colonel Paul G. Armstrong, Director, Illinois Selec-
tive Service.
4. Address —
Wm. F. Waugh, Department Commander, Depart-
ment of Illinois American Legion.
5. Moment of Silence.
6. Retirement of Colors.

MEETINGS OF THE HOUSE OF DELEGATES

TUESDAY AFTERNOON, MAY 20, 1941

- 3:00 First meeting of the House of Delegates called
to order by the President, James S. Templeton,
for Reports of Officers, Councilors, Committees,
Appointment of Reference Committees. Intro-
duction of Resolutions, and for the transaction
of other business which may come before the
House.

THURSDAY MORNING, MAY 22, 1941

- 9:00 Second meeting of the House of Delegates
called to order by the President for the Election
of Officers, Councilors, Committees, Delegates
and Alternates to the American Medical Asso-
ciation, Reports of Reference Committees and
action on same. Action on Resolutions, and

for the transaction of other business to come before the House.

THE PRESIDENT'S DINNER

The President's Dinner will be held as usual on Wednesday evening, May 21, 1941, at 7:00 p.m. in the Grand Ball Room of the Palmer House. The Committees in charge have arranged on unusually fine program for this important function, and will have a nationally famous speaker present for the only speech of the evening on a subject most timely and of general interest to all who attend the function.

Complete announcements will be made in the official program to be published in the May ILLINOIS MEDICAL JOURNAL.

MATERNAL WELFARE COMMITTEE LUNCHEON

The annual luncheon meeting of this committee will be held on Wednesday, May 21, 1941, beginning at 12:00 o'clock noon.

Short and interesting talks will be made, and announcements of the speakers will be made in the official program.

ALUMNI LUNCHEONS

The annual Alumni Luncheons will be held Wednesday noon at 12:00 o'clock. Complete announcements regarding these affairs, the places where they are to be held, and information concerning their programs, etc., will appear in the May ILLINOIS MEDICAL JOURNAL and in the official handbook.

MAKE YOUR HOTEL RESERVATIONS EARLY

There is every reason to believe that the attendance at the 1941 annual meeting will be the largest in the history of this society. It is true that the Palmer House is one of the largest hotels in this country, yet it is important that those expecting to attend the annual meeting make a reservation before going to Chicago.

The Committee on Arrangements prefers to have each member make his own reservation by writing to the hotel and telling the type of accommodations which are desired. By doing this, the hotel will be able to plan more carefully and be able to take care of the members and guests to the best advantage.

All that is necessary is to write to the Palmer House, Chicago, tell them you plan to attend the annual meeting, give the approximate time of your arrival and also the type of accommodations which are desired, whether single or double room is preferred, and with double bed or twin beds according to the desires of the individuals.

Scientific Exhibits

RED LACQUER ROOM

Frank J. Jirka, Chairman Chicago
James P. Simonds, Director of Exhibits Chicago

"Deprivation of the Infant of Its Placental Blood. Early and Late Effects on the Blood Picture."

Howard L. Alt, Quin B. DeMarsh and William F. Windle Northwestern University Medical School.

The exhibit will consist of a model, colored illustrations and graphs, "written statements," etc. In these will be depicted (1) the common custom of prompt clamping of the umbilical cord and the necessity of this practice in collecting placental blood for transfusion purposes, (2) the natural expulsion of the placenta before severance of the cord, (3) the amount of blood that can be obtained from the placenta after immediate and delayed clamping of the cord, (4) the relationship between the blood volume of the placenta and infant and the flow of placental blood into the infant and (5) the blood picture of the infant after immediate and delayed clamping of the cord. Iron equivalents of hemoglobin in the blood of the placenta and infant will be illustrated by various amounts of iron in test tubes. By this means, it will be apparent that deprivation of the infant of the iron in placental blood might result in an anemia during the nursing period. Charted values show this to be true.

"American Physio-Therapy Association."

Margaret C. Winters, American Physio-Therapy Association.

Statistics of Membership, location of schools, membership requirements and ethics of the American Physio-Therapy Association.

"Aseptic Necrosis of Femoral Head After Traumatic Dislocation of the Hip."

Sam W. Banks, Division of Orthopaedic Surgery, University of Chicago.

The exhibit will consist of roentgenograms (transparencies) of nine interesting cases of traumatic dislocations of the hip which were followed by aseptic necrosis of the femoral head. The roentgen changes are interpreted in terms of the pathological alterations. The cases demonstrate the characteristic clinical, pathological and roentgenographic features of this condition. Several cases have been followed six and seven years after the acute injury and show the extensive changes and poor functional end results when the condition is not recognized early and the hip inadequately protected during replacement of the dead bone. These alterations are in marked contrast to one case which was diagnosed before there were roentgen changes. This patient was followed by roentgenograms during the entire period of replacement. Collapse or fragmentation of the epiphysis did not occur due to adequate protection from weight bearing and the immediate end result is good.

Another case demonstrates the roentgen changes and usual satisfactory result (six years after injury) when the head becomes devitalized after a traumatic dislocation in young children as compared to the unsatisfactory outcome in recorded cases in older children and adults.

A summary of fifty cases in the literature is included. Forty-two of these have resulted in deformed and painful hips. This again emphasizes the importance of prolonged observation of all cases of traumatic dislocations so that the complication of aseptic necrosis can be recognized early before collapse of the head has occurred and which may preclude the possibility of a satisfactory outcome.

"Thiocyanates: Clinical and Experimental Studies."

M. Herbert Barker, Maurice H. Wald, Howard A. Lindberg and Loyal Davis, Northwestern University Medical School, Chicago.

Charts, graphs, photographs and illuminated transparencies illustrating the effects of the drug upon normal and hypertensive dogs and upon humans with hypertension; upon human hypertension before and after splanchnicotomy. The toxic manifestations and the pathological effects of prolonged toxic doses will be shown. The technic of blood thiocyanate determination and its importance to correct therapeutics with the drug will be accented.

"Bile Duct Surgery: A New Method of Anastomosis of the Bile Ducts to the Stomach and Duodenum."

Roy E. Brackin, Rush Medical College, Department of Surgery, Chicago.

This is a new method of transplantation of the bile ducts and resembles our method of uretero-intestinal anastomosis which was shown at the 1939 meeting. The experimental findings are to be shown by means of the gross animal specimens, photomicrographs of the choledochointestinal openings up to one year after operation. Technic will be shown by drawings. The evidence for the various steps of the method will be shown by charts and experimental findings. We have two clinical cases now to present upon which this method has been employed.

"Burns Treated By Cod Liver Oil Ointment — Tissue Paper Dressing. A Treatment, Gentle, Simple, Safe, in Minor and Extensive Burns."

George B. Callahan, St. Therese's and Victory Memorial Hospitals, Waukegan.

Individual mountings of several types of burns classified by cause, thermal, chemical, dry steam, etc., with extent marked in one picture of areas involved, the duplicate showing end results; pictures to be uniform in size and writing easily legible with minimum wording adequate to describe. Summarized, favorable results (only one infection); smaller one illustrating in detail gentleness, simplicity, surgical cleansing, cod liver oil ointment, tissue paper dressing and redressing and supportive measures.

One colored moving picture 13-15 minutes in length of extensively (head to foot) burned case showing technic, application, progress in healing and end results. A few Kodachrome still pictures.

"Bone Sarcoma."

American College of Surgeons.

Exhibit consists of three cases with transparencies, sections, photomicrographs and x-rays of types of bone sarcoma. Also posters describing the content of the Registry of Bone Sarcoma of the American College of Surgeons.

"Reaction of Bone to Metallic Implants."

H. A. Davenport and R. T. Bothe, Northwestern University Medical School, Chicago.

The material to be shown consists of about 40 femurs of cats. These are to be mounted on cardboard and accompanied by x-ray photographs. The object of the study was to determine whether electrolytic action between metals was a determining factor in the response of living bone to metallic implants, or whether other chemical and physical factors determined the type of response. Readings of potential differences between unlike metals were made in the living animal. The findings indicate that the bone responds in a rather characteristic manner to a given pure metal or alloy and that this reaction is largely independent of an adjacent unlike metal. Electrolytic action is of minor importance.

"The Surgical Approach to Hypertension."

Geza de Takats, Howard E. Heyer, Roy O. Riser and Robert W. Keeton, University of Illinois College of Medicine, Chicago.

Charts illustrating the historical development of surgical treatment, the classification of hypertensive states, the grading of the severity of the disease and the indications for operation are shown. The pre-operative study of patients is described. The various technics used in this clinic are shown. The results are classified and tabulated. The mechanism of relief obtained by surgical methods is analyzed. Illustrative case reports are given. Moulages illustrating the degree and nature of arteriolar sclerosis have been prepared. Colored photographs of eyegrounds are shown in a transparent box illustrating the various grades of hypertension and the changes occurring after operation.

"Lipocaic. A Fat Metabolizing Hormone of the Pancreas."

L. R. Dragstedt, O. C. Julian, D. E. Clark, J. G. Allen, and C. W. Vermeulen, University of Chicago, Department of Surgery, Chicago.

Exhibit will present evidence for the existence of the hormone lipocaic and for certain of its properties and functions. The effect of lipocaic in the treatment of certain types of fatty infiltration of the liver, xanthomatosis and psoriasis will be presented.

"Outdoor Allergens of Illinios."

Oren C. Durham, Abbott Laboratories, North Chicago.

The exhibit deals with pollen and fungus spore surveys in general, methods, apparatus, identification and statistical results of nation-wide surveys over a period of 15 years. Special attention is given to a combined field and atmospheric survey of Chicago in which a careful check was made of the hay fever plants in each square mile of the city. A card index covering each square mile, as well as surrounding suburbs, will be available for reference. Results of a statewide survey will also be shown. A large reference collection of typical hay fever pollens and fungus spores will be available for examination and practice identification.

"Women's Field Army. American Society for the Control of Cancer."

Mrs. Arthur I. Edison, State Commander Illinois Division.

Diorama giving statistics on cancer — also placards em-

phasizing the fact that early cancer can be cured. Posters explaining work of the Women's Field Army and its aims for Illinois. Slides to be shown explaining organization of the Women's Field Army and the fight against cancer.

"Fractures of the Facial Bones."

Methods of Treatment.

Casper M. Epstein, M.D., D.D.S., Chicago.

There will be approximately 50 skulls and wax models depicting the various types of fractures of the facial bones and their method of treatment. There will also be several large models and diagrams illustrating the anatomy involved in these injuries. About 70 or 100 radiographic films will reveal a variety of fractures of the facial bones and the results obtained by the various methods demonstrated. A colored movie will be shown illustrating two different types of fractures and their management.

"Cesarean Section."

Frederick H. Falls and C. S. Holt, University of Illinois and Illinois State Department of Public Health.

Bas-relief models depicting steps in technic of low cervical, classical and Porro operations. Drawings illustrating rare types of operations and various incisions. Lettered charts covering indications and contra-indications. Twelve to fifteen models which are life size to scale and in full color. There will also be a statistical chart. Models and drawings will have descriptive legends.

"Electrical Accidents. A Twenty-Five Year Study of Resuscitation."

Hart E. Fisher, M. D. Lewis, J. Bailen, A. E. Doe, Chicago Rapid Transit Company, Medical Department, Chicago.

A comprehensive study of the subject, with special reference to technic of treatment, complications and statistics — from twenty-five years' experience.

This subject is presented through the medium of transparencies, photographs, working models, charts, etc. Under treatment are shown the various methods of artificial respiration from the early ages down to the present time with original or replicas of the various apparatus used. This will likewise include the "Pole Top Resuscitation" recently introduced into the Public Utility Field.

"Periodical Medical Examinations. A Twenty-Five Year Experience in Industry."

Hart E. Fisher, Lewis H. Ruttenberg, George H. Irwin, Chicago Rapid Transit Company, Medical Department, Chicago.

A true observation of twenty-five years experience in industry. This subject will show our experience of twenty-five years' observation on the same group of transportation employees through the medium of charts, diagrams, forms, photographs, apparatus, cardiographic study, audiometer study of hearing acuity and the testing of night blindness.

The history, routines, procedures, of these medical surveys and the results obtained after a period of twenty-five years' experience in employee health conservation, with the same group of transportation employees.

"Recent Advances in Diagnosis and Treatment of Pulmonary Tuberculosis. Edward Sanatorium."

Jerome R. Head, Medical Director, Edward Sanatorium, Naperville.

Reproductions of x-rays, photographs and drawings illustrating (1) new technic for extrapleural thoracoplasty, (2) the laminograph in the diagnosis of cavities in pulmonary tuberculosis, and (3) Monaldi's suction treatment of tuberculous cavities.

"X-Ray Study of Pulmonary Tuberculosis, Diagnosis and Treatment."

Municipal Tuberculosis Sanitarium of Chicago.

Three illuminated cabinets demonstrating by x-ray and pathologic specimens diseases of the lungs and results of surgical treatment. Colored moving picture demonstrating the surgical technic.

"Mechanical Nostrums."

American Medical Association.

An exhibit from the Council on Physical Therapy and the Bureau of Investigation showing various mechanical devices such as the "Horse Collar," and "gas pipe" cure, etc., for which weird claims have been made, together with an exposition file containing descriptions of many more similar gadgets.

"Use and Abuse of Barbiturates."

American Medical Association.

An exhibit from the Council on Pharmacy and Chemistry consisting of posters showing the use and abuse of the barbiturates; a chart giving the names and chemical formulas of thirty products on the market; an exposition file and New and Non-official Remedies giving additional information.

"Cutaneous Manifestations of Tuberculosis."

American Medical Association.

An exhibit from the Scientific Exhibit of the American Medical Association, in conjunction with the Section on Dermatology and Syphilology, consisting of four panels each five feet high and three feet wide, showing photographs of cutaneous tuberculosis and conditions which simulate it.

"Mottled Enamel and Dental Program Studies and Results in Illinois."

The Division of Dental Health Education in Cooperation with the Illinois Dental Society.

Studies made by the Division of Dental Health Education in cooperation with the Illinois State Dental Society on mottled enamel caused by fluorine in public water supplies in certain sections of Illinois.

"Detection of False Positive Reactions in Sero Diagnosis of Syphilis."

State of Illinois, Department of Public Health.

Exhibit of charts illustrating basis of Kahn Test for the detection of false positive serologic reactions as used in the State Department of Public Health Laboratories; detection of reactions in the absence of syphilis given by lower animals, leprosy, malaria and other pathologic cases; detection of reactions in syphilis; practical demonstrations are planned with verification test of true and false positive serologic reactions.

"Sight Saving in the Schools."

Illinois Society for the Prevention of Blindness.

Diorama of Sight-Saving Class; Bulletin Board showing materials used in Sight-Saving Room in public schools in Illinois.

"Studies on Shock in Man and Animals."

Sidney O. Levinson, Heinrich Necheles, Helmut Gutmann and Mr. William Olson, Samuel Deutsch Convalescent Serum Center and Department of Gastro-Intestinal Research of Michael Reese Hospital, Chicago.

An illuminated cabinet displaying transilluminated charts and descriptions; an illuminated table displaying the various steps of serum and plasma preparation; graphs and descriptions of studies of shock in animals from the point of view of blood chemistry and transfusion therapy.

"Sternal Marrow Studies."

L. R. Limarzi, R. M. Jones, J. T. Paul, University of Illinois College of Medicine, Chicago.

The exhibit will consist of charts and drawings illustrating the methods in general use in the study of bone marrow and the indications for sternal marrow aspirations. A correlation of the peripheral blood findings with the picture seen in the bone marrow in certain anemias, leukopenic states and thrombocytopenic diseases will be illustrated by a series of photomicrographs.

"Heart Sounds — Clinical Evaluation."

Clayton J. Lundy, Elizabeth McCormick Child Research Grant, and LaRabida Sanitarium, Chicago.

The exhibit consists of a series of charts made up of drawings and heart sound records derived from patients suffering from Rheumatic Heart Disease especially, and a few other common clinical conditions.

"Educational Activities of a State Medical Society."

Educational Committee, Illinois State Medical Society.

The Exhibit will show the various methods used by the Educational Committee of the Illinois State Medical Society to bring the story of medicine and good health before the public. It will show how the cooperation of county medical societies and individual doctors makes such a program effective. Panels and diagrams will be used.

"Sinus Disease and the Radiologist. Is Radiation Therapy in Para-nasal Sinus Disease Worth While?"

H. T. Mostrom, Batavia.

This exhibit records by a number of x-ray films and brief case histories, the experiences encountered in treating with x-radiation a rather large number of cases of para-nasal sinus disease over a period of four years.

Over 300 cases were surveyed roentgenologically, and of these over 200 were treated. A short history was taken in every case prior to radiation therapy and where possible films were made after the completion of treatment for comparison with film pathology present before therapy. In a few instances films were made weekly or every other week during the period of treatment to observe changes as they occurred.

Illustrative films of various types of sinus pathology encountered will be shown together with companion films indicating the changes apparently induced by x-ray therapy. In other cases films will be shown to illustrate the types of sinus pathology where x-ray therapy failed to yield a satisfactory clinical result.

"Beaded Wires (Thompson) in the Treatment of Fractures of the Leg."

Charles N. Pease, Chicago.

The use of Beaded Wires for fixation of fractures in closed reduction has resulted in materially reducing delayed union, necessary for open reduction, and has diminished hospital stay to as low as two days. Patients may be ambulatory within twenty-four hours after reduction. Beaded Wires may also be used instead of screws in fractures involving joints with tibial plateau and trimalleolar fractures.

A new bow and drill for these wires will also be demonstrated. Models will also be shown in addition to x-ray films.

"Analysis of Eight Cases of Liver Pathology."

Walter Schiller and William Mavrelis, Cook County Hospital, Cook County Graduate School, Chicago.

Eight mounted gross specimens in jars. Microscopic slides in viewing box from each case. Cards with histories, gross and microscopic descriptions posted.

"The Treatment of the Pathology of Inflammation by Short Wave Diathermy. (Electromagnetic Induction)."

Milton G. Schmitt, Northwestern University Medical School, Chicago.

Roentgenographic and photographic presentation of representative cases comprising inflammatory conditions of traumatic and infectious origin treated by short wave diathermy with application by electromagnetic induction. The cases include: carbuncle; cellulitis of the face; infected hand with lymphangitis; non union of tibia and fibula (9 months standing); osteomyelitis of tibia (post operative treatment); and pneumonitis. The principles upon which the technic is based are portrayed and explained by charts and diagrammatic illustrations, presenting a new concept of treatment whereby conditions heretofore considered contraindications may be safely and successfully treated. All materials will be displayed as transparencies on fluorescent illuminators.

"Professional Pharmaceutical Exhibit."

Illinois Pharmaceutical Association, and the University of Illinois School of Pharmacy, Chicago.

Professional pharmaceutical exhibit.

"Radium Therapy."

Frank E. Simpson, Frank E. Simpson Radium Institute, Chicago.

The exhibit will be composed entirely of motion pictures in color. There are five separate films, the titles of which are as follows:

1. Radium Treatment of Carcinoma of the Tongue.
2. Intra-oral Carcinoma.
3. Radium Treatment of Carcinoma of the Larynx.
4. Radium Treatment of Carcinoma of the Lip.
5. Radium Treatment of Angiomas.

"Gastroscopy and Peritoneoscopy as Aids to Diagnosis."

Leo L. J. Hardt, Frank DeTrana, LeRoy H. Sloan, Municipal Tuberculosis Sanitarium, Cook County Hospital, Illinois Central Hospital, Chicago.

Moving pictures in color demonstrating the technic of gastroscopic procedure and of peritoneoscopic procedure.

Lantern slides in color of gastroscopic findings showing the value of the procedure in diagnosis. The lantern slides are projected through a new lantern with the reproduction of the natural colors.

Lantern slides of the appearance of gross lesions of the abdominal viscera when viewed by peritoneoscope.

"The Stream of Medicine Through 5,000 Years." Fredrick Stenn, Chicago.

The progress of medicine is personified in the form of a river which moves backwards and forwards receiving tributaries and entering a large lake representing modern medicine. The particular periods of medicine are specified on the river. Portraits of twelve representative individuals of the various periods are along side with brief remarks of their attainments. Statements are enclosed regarding lessons taught by history.

"Sex Hormones. Clinical Application."

Willard O. Thompson, and Norris J. Heckel,
Rush Medical College and Presbyterian Hospital, Chicago.

The following effects of administration of the male and female sex hormones will be illustrated with photographs and photomicrographs:

1. Stimulation of genital growth and the development of other secondary sexual characteristics in men with eunuchoidism and in women with primary amenorrhea.
2. Damage to the normal testis. Illustrated also by spermatozoa counts.

"Breast Tumors"

Joseph A. Tuta, Grant Hospital, and the Department of Pathology, University of Illinois College of Medicine, Chicago.

The exhibit is composed of Kodachrome lantern slides of approximately 35 cases of breast tumors. The slides are mainly cross sections of the unfixed tumor masses, together with a few microscopic slides. The history of the case accompanies the showing of each slide. There are also charts of breast tumors and museum jars of specimens.

"The History of Illinois Medical Women."

Branch No. 2, American Medical Women's Association.

Consists of figurines of famous medical women, books written by medical women, pictures of distinguished sons and daughters of Illinois medical women; slides illustrating lectures and demonstrations of the work of medical women.

"Ambulatory Treatment of Varicose Veins and Ulcers."

Arkell M. Vaughan, and Robert E. Lee, Loyola University School of Medicine, Fantus Clinic, Cook County Hospital, Mercy Hospital Free Dispensary, Chicago.

The exhibit consists of the following:

1. Two large posters with photographs and legends, describing case histories.
2. Two large posters with photographs and legends showing anatomy of saphenous magna, its branches at fossae ovalis, and the surgical technic of high saphenous vein ligation.
3. Dissected cadaver specimens of saphenous veins, its branches and its relationship to femoral vein at fossae ovalis.

"Cutaneous Tumors — Benign and Malignant."

Erwin P. Zeisler, Northwestern University Medical School, Chicago.

An exhibit consisting mainly of 5 x 7 photographs tinted with transparent oil to bring out the natural colors of the different tumors of the skin. The clinical and histologic features that are important in differential diagnosis are brought out by the exhibit.

"Pathological Museum Specimens."

Otto Saphir, The Chicago Memorial Hospital, Chicago.

It is planned to exhibit a number of well mounted and well preserved specimens giving a short summary of the history of the patient from whom the specimen was removed, together with microphotographs exhibiting the pertinent morphologic character of the specimens.

"Hygeia."

The American Medical Association.

In this booth, there will be on display sample copies of HYGEIA, The Health Magazine, published by the American Medical Association. As you know, HYGEIA makes a splendid magazine for your reception room table. A number

of doctors are under the impression that HYGEIA is designed for the physician. That is not the case. HYGEIA is especially planned and written to appeal to your waiting patients. You are invited to visit this booth and talk to members of the Woman's Auxiliary who will be in charge.

Technical Exhibitors AT THE 1941 ANNUAL MEETING

A—

Abbott Laboratories, North Chicago, Illinois
A. S. Aloe Company, St. Louis, Missouri
American Hospital Supply Corporation, Chicago, Illinois
The Arlington Chemical Company, Yonkers, New York
Armour and Company, Chicago, Illinois

B—

Bard-Parker Company, Inc., Danbury, Connecticut
Bell & Howell Co., Chicago, Illinois
Bilhuber-Knoll Corporation, Orange, New Jersey
The Borden Company, New York, New York
The Burdick Corporation, Milton, Wisconsin
Burroughs Wellcome & Co., Inc., New York, New York

C—

Cambridge Instrument Co., Inc., New York, New York
Cameron Surgical Specialty Company, Chicago, Illinois
Carnation Company, Milwaukee, Wisconsin
The Chicago Dietetic Supply House, Inc., Chicago, Illinois
Chicago Pharmacal Co., Chicago, Illinois
Ciba Pharmaceutical Products, Inc., Summit, New Jersey
The Coca-Cola Company, Atlanta, Georgia

D—

Davies, Rose and Co., Ltd., Boston, Massachusetts
F. A. Davis Company, Philadelphia, Pennsylvania
The DeVilbiss Company, Toledo, Ohio
A. Diadul & Sons, Inc., Chicago, Illinois
Doho Chemical Corporation, New York, New York

E—

Eli Lilly and Company, Indianapolis, Indiana

F—

C. B. Fleet, Co., Inc., Lynchburg, Virginia
Flint, Eaton & Company, Decatur, Illinois
H. G. Fischer & Co., Chicago, Illinois

G—

General Electric X-Ray Corporation, Chicago, Illinois
Gerber Products Company, Fremont, Michigan

H—

The G. F. Harvey Company, Saratoga Springs, New York
H. J. Heinz Company, Pittsburgh, Pennsylvania
Hille Laboratories, Chicago, Illinois
Horlick's Malted Milk Corporation, Racine, Wisconsin
Hynson, Westcott & Dunning, Inc., Baltimore, Maryland

J—

"The 'Junket' Folks," Little Falls, New York

K—

L—

Lea & Febiger, Philadelphia, Pennsylvania
Lederle Laboratories, Inc., New York, New York
Thomas Leeming & Company, New York, New York
Libby, McNeill & Libby, Chicago, Illinois
J. B. Lippincott Company, Philadelphia, Pennsylvania

M—

A. E. Mallard, Detroit, Michigan
Mead Johnson & Company, Evansville, Indiana
The Medical Protective Company, Fort Wayne, Indiana
Mellin's Food Company, Boston, Massachusetts
The Mennen Company, Newark, New Jersey
The Wm. S. Merrell Company, Cincinnati, Ohio
Milk Foundation Inc., Chicago, Illinois

The C. V. Mosby Company, St. Louis, Missouri
M & R Dietetic Laboratories, Inc., Columbus, Ohio
V. Mueller & Co., Chicago, Illinois

N—
O—
P—

Parke, Davis & Company, Detroit, Michigan
Pet Milk Company, St. Louis, Missouri
Petrolagar Laboratories, Inc., Chicago, Illinois
Philip Morris & Co. Ltd. Inc., New York, New York
Picker X-Ray Corporation, New York, New York
Prolarmon, Inc., Chicago, Illinois

R—
Ralston Purina Company, St. Louis, Missouri

S—
W. B. Saunders Company, Philadelphia, Pennsylvania

Schering Corporation, Bloomfield, New Jersey
G. D. Searle & Company, Chicago, Illinois
Sharp & Dohme, Inc., Philadelphia, Pennsylvania
S. M. A. Corporation, Chicago, Illinois
Smith, Kline & French Laboratories, Philadelphia, Pennsylvania

E. R. Squibb & Sons, New York, New York
Standard X-Ray Company, Chicago, Illinois
Frederick Stearns & Company, Detroit, Michigan
Surgical Publishing Company, Chicago, Illinois
Sutliff & Case Co. Inc., Peoria, Illinois

T—
U—V—
W—

White Laboratories, Inc., Newark, New Jersey
Winthrop Chemical Company, Inc., New York, New York

John Wyeth & Brother, Inc., Philadelphia, Pennsylvania

X—Y—Z

X-Ray Equipment Co., Chicago, Illinois
The Zemmer Company, Pittsburgh, Pennsylvania

NOTES ON TECHNICAL EXHIBITS

ABBOTT LABORATORIES, Booth 89

You are most heartily invited to stop here and discuss the newer specialties with the Abbott-trained Professional Representatives in attendance.

The wide assortment of newer products displayed in this exhibit merits your attention and study and your questions are solicited.

Description of the items being shown is prohibited by lack of space, so, COME IN AND SEE US!

A. S. ALOE COMPANY, Booth 87

Messrs. Frazin and Greenwell, A. S. Aloe Company representatives, will be in charge of the display of our company this year. The exhibit will comprise a complete line of American-made Stainless Steel instruments, medical, surgical and laboratory equipment and supplies for the physician. Many new, exclusive items of unusual interest will be shown.

AMERICAN HOSPITAL SUPPLY CORPORATION, Booth 55

On display will be the new Baxter Centri-Vac and Plasma-Vac Containers for preparation of plasma and serum. Also two other well known Baxter products, the Transfuso-Vac and intravenous solutions in Baxter Vaco-liters.

There will also be the Vasocillator, or Sanders Bed, a simple rational adjunct in treating of peripheral vascular diseases. The Dickson Paraffin Bath, widely used in certain types of heat therapy. Coli-Bactragen, which protects against peritonitis and is useful in treatment in early stages. American high titre Human Blood Typing Serums.

THE ARLINGTON CHEMICAL COMPANY, Booth 14

The Arlington Chemical Company is featuring its product AMINOIDS, chocolate flavored and plain. Aminooids represent a combination of Amino-Acids and contain vitamins B, C and D. This product has proved of marked therapeutic benefit in underweight, malnutrition cases and in pre- and post-operative feeding, also as a stimulant to metabolism.

Dr. J. H. Frazer, in charge of the exhibit, will be glad to answer any inquiries relative to this product; also inquiries regarding allergic problems pertaining to hayfever, asthma, etc.

ARMOUR AND COMPANY, Booth 18

BARD-PARKER COMPANY, INC., Booth 66

Bard-Parker will exhibit the following products: Rib-Back surgical blades; Renewable Edge Scissors; Hematological Case for obtaining blood samples at the bedside; Ortholator for obtaining accurate dental radiographs; Formaldehyde Germicide and Instrument Containers for the rustproof sterilization of surgical instruments.

BELL & HOWELL COMPANY, Booth 9

A complete display of the latest and finest motion picture equipment for making and showing of professional and personal movies.

Inspect the latest 8 mm. and 16 mm. cameras, projectors and accessories being used for full color or black and white medical movies in hospitals, medical schools, and health departments for training, research, education and entertainment.

Attendants will be pleased to supply information and to demonstrate equipment.

BILHUBER-KNOLL CORPORATION, Booth 68

We welcome another opportunity to be with you and present our "Council Accepted" medicinal chemicals: Dilauid — to relieve pain and allay cough; Theocalcin — myocardial stimulant and diuretic; Metrazol — quickly acting circulatory and respiratory restorative.

Messrs. Kidwell and Murbach will be glad to give you practical and scientific information on these and other products such as Phyllicin, the well-tolerated theophylline salt, and to further acquaint you with their production in our plant at Orange, New Jersey.

THE BORDEN COMPANY, Booth 93

Visit The Borden Company to see infant foods made entirely from Board-of-Health-inspected milk and designed specifically for infant formulas. Biolac, the distinctive new liquid infant food, affords convenience, economy, and optimal nutrition; it is sterile and requires simply dilution with boiled water to make a complete formula. Preparation of the whole day's feedings is done in only 15 minutes.

Beta Lactose is nature's carbohydrate in an improved, readily soluble form.

Dryco provides formula flexibility for every feeding problem. Also Klim, Merrell-Soule Products, and Irradiated Evaporated Milk.



THE BURDICK CORPORATION, Booth 100

The Burdick Corporation, Milton, Wisconsin, is exhibiting a complete line of Physical Therapy Equipment, including Short Wave Diathermy, Ultra violet and Infra red Lamps, and the Rhythmic Constrictor, a new and important development for the treatment of Peripheral Vascular Disease in the extremities. Doctors are invited to register for the Syllabus, a periodical of Physical Therapy abstracts from current medical literature.

BURROUGHS WELLCOME & CO. (U.S.A.) INC., Booths 63 and 64

Burroughs Wellcome & Co. (U.S.A.) Inc., New York, presents a representative group of fine chemicals and pharmaceutical preparations, together with new and important therapeutic agents of special interest to the medical profession.

CAMBRIDGE INSTRUMENT CO., INC., Booth 75

CAMERON SURGICAL SPECIALTY COMPANY, Booth 79

See the new Cameron-Schindler Flexible Gastroscope, the Color-Flash Clinical Camera, the Projector and the Mirrolite. Latest developments in electrically lighted Diagnostic and Operating instruments for all parts of the body will also be shown. Of special interest will be the new inexpensive office model Radio Knife, Combination Spark Gap and Tube Electro-Surgical Unit, and other Electro-Surgical Units for cutting, coagulating, desiccation and fulguration in all sizes from the office model to the Hospital unit with an abundance of power for the most radical surgery and trans-urethral prostatic resections.

CARNATION COMPANY, Booths 77 and 78

CHICAGO DIETETIC SUPPLY HOUSE, INC., Booth 83

Foods for sugar and starch restricted diets and foods for allergy diets will be exhibited by the Chicago Dietetic Supply House, Inc. Learn of the large variety of dependable products which are offered to make dieting easier for your

patients. Competent dietitians will be present to answer your questions.

CHICAGO PHARMACAL COMPANY, Booth 67

CIBA PHARMACEUTICAL PRODUCTS, INC., Booth 108

At our booth will be found the well-known specialties of Ciba Pharmaceutical Products, Inc., including Coramine, Nupercainal, Digitoline, Trasentin, etc. Latest information concerning Perandren, Di-Ovocylin and other gynecogenic preparations will be available, together with literature describing their clinical application where androgenic therapy is indicated. Representatives of the firm will be in attendance and will be glad to answer any questions in regard to the products displayed.

THE COCA COLA COMPANY, Booth 6

Coca-Cola will be served to the delegates at the Annual Meeting of the Illinois State Medical Society with the compliments of The Coca-Cola Company.

DAVIES, ROSE & COMPANY, LTD., Booth 81

Davies, Rose & Company, Limited, Boston, Mass., hope that you will visit their headquarters. The preparations that this firm is exhibiting have a world-wide reputation. Physiological or chemical tests are made to assure their standardization. Clinical experience vouches for their dependability.

F. A. DAVIS COMPANY, Booth 84

Visit our booth and examine these new publications: Stroud-Cardiology; Loewenberg — Medical Diagnosis and Symptomatology; Bland-Montgomery — Obstetrics; Piersol — Cyclopedic of Medicine, Surgery and Specialties; Reimann — Treatment in General Medicine; Loewenberg — Endocrinology; Smith — Proctology; Taber — Cyclopedic Medical Dictionary; Mullen — Handbook of Treatment.

THE DeVILBISS COMPANY, Booth 10

The DeVilbiss Company will exhibit at the 1941 convention of the Illinois State Medical Society which will be held at the Palmer House in Chicago.

The most advanced line of instruments for scientific application of solutions to the nose and throat in office treatment or to prescribe for home use will be on display.

Also included in the exhibit will be illustrations showing the superior coverage offered by the atomizer in the application of solutions to the nose and throat. These are based on x-ray research.

Copies of the illustrations for reference may be secured from L. H. Smock who will be in charge of the display.

A. DIADUL & SONS, INC., Booth 36

DOHO CHEMICAL CORPORATION, Booth 60

The Auralgan exhibit shows a modelled and enlarged human auricle together with complete series of three dimensional ear drums, each depicting a different pathologic condition based upon actual case observation. These drums were prepared with strict scientific accuracy for their interesting and instructive advancement of medical education.

Our teaching film, "Otoscopy," in sound and color which also will be shown, is available without any charge, to any medical school, hospital or study group.

ELI LILLY AND COMPANY, Booth 86

Eli Lilly and Company will demonstrate the germicidal efficacy of 'Merthiolate' (Sodium Ethyl Mercuri Thiosalicylate, Lilly) and the compatibility of the antiseptic with body cells and fluids. Other new and useful products will be featured.

C. B. FLEET COMPANY, INC., Booth 34

PHOSPHO-SODA (Fleet), a saline laxative, has been presented to the medical profession for over fifty years. This eliminant is suggested when a rapid non-gripping action is desired. It is recommended in gall bladder disorders.

The profession is cordially invited to visit the booth of the C. B. Fleet Company, Inc.

FLINT, EATON & COMPANY, Booth 2

You will be interested in the new dosage form of calcium gluconate on display at our booth. Flint, Eaton & Company representatives will welcome you and explain the advantages of Calcium-Gluconate-Effervescent. This new product offers a dosage form which is palatable as well as economical.

H. G. FISCHER & COMPANY, Booth 11

H. G. Fischer & Company 1941 models of x-ray and short wave apparatus are so distinctive, both in improved performance and in various instances greatly lowered in price, that every physician should consider inspection a conventional obligation. The complete H. G. Fischer & Company line includes shockproof x-ray apparatus, short wave units,

combination cabinets, galvanic and wave generators, ultra violet and infra-red, lamps, and many other units, accessories and supplies.

Physicians attending the convention are invited to ask for demonstration of apparatus in which they are interested and to consult with Fischer representatives regarding technics made available by Fischer apparatus.

GENERAL ELECTRIC X-RAY CORPORATION, Booth 1

GERBER PRODUCTS COMPANY, Booth 110

The complete line of Gerber Baby Foods will be on display — Dry, Pre-Cooked Cereal Food, fifteen Strained Foods and ten Junior Foods. Booklets are available for distribution to mothers or patients on special diets as well as professional literature, and will be sent to registrants for examination.

THE G. F. HARVEY COMPANY, Booths 88 and 89

The G. F. Harvey Company, one of the oldest pharmaceutical concerns in the country, which since its establishment in 1880, has been the manufacturer of ethical products for the medical profession, will exhibit its new bland antiseptic Oilzo, together with a permanently stable, fool-proof form of digitalis powdered leaves, Digiseals.

H. J. HEINZ COMPANY, Booth 96

The makers of Heinz Strained and Junior Foods appreciate the confidence which the members of the Illinois State Medical Society have expressed in their recommendation of these foods for infant feeding and special diets.

Some of these foods are on display as well as various literature — newest of which is the Nutritional Chart, 9th edition, and Nutritional Observatory.

Mr. F. B. Heard and Mr. O. L. Cluck are at your service and will welcome members and friends at the exhibit.

HILLE LABORATORIES, Booth 105

Hille Laboratories, specializing in MEDICINAL COLLOIDS OF HEAVIER METALS such as Gold, Silver, Mercury, Bismuth, Copper and Iron, look forward to your visit at their booth during the 1941 annual meeting.

HORLICK'S MALTED MILK CORPORATION, Booth 101

You are invited to visit the Horlick exhibit of Horlick's, the original Malted Milk, powder and tablets. Horlick's is a distinctive natural food combination containing the basic nutritive principles of full-cream milk and malted grain. Its ease of digestion, freedom from fiber and roughage, together with its rich calcium and phosphorus content, particularly recommend it to the physician.

HYNSON, WESTCOTT & DUNNING, INC., Booths 69 and 70

Prominent among the products exhibited will be Mercurochrome, now in its 21st year of acceptance by the Council on Pharmacy and Chemistry of the American Medical Association. Thantis Lozenges, Corba Venom Solution and Lutein Solution Ampules will also be displayed, in addition to the diagnostic solutions and apparatus supplied by the manufacturers. The clinical effectiveness of Lutein Solution, an aqueous extract of corpus luteum, in the treatment of menopausal disturbances and its effectiveness in obstetrical complications will be illustrated by especially prepared diagrams.

"THE 'JUNKET' FOLKS", Booth 102

At this booth "The 'Junket' Folks," Chr. Hansen's Laboratory, Inc., will serve rennet-custards made with either "Junket" Rennet Tablets or "Junket" Rennet Powder. There will also be a display of "Junket" Brand Food Products. Enlarged photographs show how the rennet enzyme in rennet-custards transforms milk into softer, finer curds. Rennet-custards are widely recommended for infants, children, convalescents, post-operative cases and as a delicious, healthful dessert for the whole family. Fully informed attendants will be on duty.

LEA & FEBIGER, Booth 58

Lea & Febiger will exhibit among their new works, Kraines' Neuroses and Psychoses, Portis on The Digestive System, Lewin on The Foot and Ankle, Rony on Obesity and Leanness, and Adair's Obstetrics and Gynecology. New editions will be shown of Joslin's Treatment of Diabetes, Joslin's Diabetic Manual, Comroe on Arthritis, Fishberg on Heart Failure, Cushny's Pharmacology, Haden's Hematology, Simon's Common Contagious Diseases, Boyd's Internal Diseases and other new publications.

LEDERLE LABORATORIES, INC., Booth 35**THOMAS LEEMING & COMPANY, Booth 57****LIBBY, McNEILL & LIBBY, Booth 16**

You are cordially invited to visit Libby, McNeill & Libby's exhibit where attendants will point out the merits of Homogenized Baby Foods, Chopped Foods and Evaporated Milk. Libby's special Method of Homogenization makes Libby's Baby Foods extra smooth, extra easy to digest.

J. B. LIPPINCOTT COMPANY, Booth 80

Among the interesting Lippincott Publications on display will be Kugelmass's: "Newer Nutrition in Pediatric Practice" and Becker and Obermayer's: "Modern Dermatology and Syphilology," as well as "Functional Disorders of the Foot" by Dickson and Diveley which has already gone into a second printing. Leaman's brand new book, "Management of the Cardiac Patient" will also be displayed. Other interesting works include Thorek's: "Modern Surgical Technic," Rigler's: "Outline of Roentgen Diagnosis," Barborka's: "Treatment by Diet" and many others.

A. E. MALLARD, Booth 13

A. E. Mallard, manufacturing chemist, of Detroit, will display modern pharmaceutical products which are in keeping with the present trend of medical therapy. These products are manufactured under strict laboratory control, and are guaranteed to be true to label and of reliable potency, and are the result of knowledge gained in 30 years experience in pharmaceutical research and manufacturing. Dan L. Hovis, Peter J. Roth, Ben R. Smith and E. A. Wherry, representatives, will be on hand to welcome you.

MEAD JOHNSON & COMPANY, Booth 95

Mead Johnson & Company will exhibit several new products in addition to Dextri-Maltose, Pabulum and Oleum Percomorphum. They will also have on display various examples of the slogan, "SERVAMUS FIDEM" — We Are Keeping the Faith.

THE MEDICAL PROTECTIVE COMPANY, Booth 76

The most exacting requirements of adequate liability protection are those of the professional liability field. The Medical Protective Company, specialists in providing protection for professional men, invites you to confer, at their exhibit, with the representative there. He is thoroughly trained in Professional Liability underwriting.

MELLIN'S FOOD COMPANY, Booth 61

Physicians are cordially invited to call at our booth to place before our representatives all questions regarding the composition of Mellin's Food and its usefulness in infant and adult feeding. It is suggested that constipation in infancy and the preparation of nourishment for adult patients who are far below normal as a result of prolonged illness or faulty diet are particularly interesting topics for discussion.

THE MENNEN COMPANY, Booth 106

The Mennen Company will exhibit their two baby products — Antiseptic Oil and Antiseptic Borated Powder. The Antiseptic Oil is now being used routinely by more than 90% of the hospitals that are important in maternity work. Be sure to register at the Mennen exhibit and receive your kit containing demonstration sizes of their shaving and after-shave products; also, for the lucky number prize drawing to be held at the close of the Convention for DeLuxe Fitted Leather Toilet Kits.

THE WM. S. MERRELL COMPANY, Booth 5

The Merrell exhibit will feature several new therapeutic agents of genuine interest to the practicing physician, in addition to a large number of prescription specialties of established usefulness. You are cordially invited to drop by and visit with us.

MILK FOUNDATION INC., Booth 53

The exhibit will illustrate the use of fresh Grade A Milk in infant feeding formulas, and has been approved by the Council on Foods. We will describe the preparation of the formula and also the advantages of the use of the fresh product.

THE C. V. MOSBY COMPANY, Booth 59

Doctors attending the Illinois State Medical Society convention are cordially invited to visit the Mosby Booth — there to inspect the new publications which will be on display. Outstanding new volumes on surgery, dermatology, nervous and mental diseases, heart diseases, x-ray, obstetrics and gynecology, and practice of medicine will be shown. Browse through this new material at the Mosby Booth.

M & R DIETETIC LABORATORIES, INC., Booth 12

M & R Dietetic Laboratories, Inc., will display Similac and powdered SoFikurd. Representatives will be glad to discuss the merits and suggested application of these products.

V. MUELLER & COMPANY, Booths 3 and 4

The V. Mueller & Company (Chicago) exhibit will include a number of new instruments as well as several new pieces of surgical equipment for both the surgeon and the hospital. From what are perhaps the largest and most comprehensive lines of such equipment in the country today, representative samples of all types of fine surgeon's instruments will be included in the display. Visit us — see the things you read about.

PARKE, DAVIS & COMPANY, Booth 94

Featured in the Parke-Davis Exhibit will be the sex hormones, Theelin and Theelol; antisiphilitic agents, such as Mapharsen and Thio-Bismol; posterior lobe preparations, including Pituitrin, Pitocin and Pitressin; and various Adrenalin Chloride Preparations.

PET MILK COMPANY, Booths 90 and 91

An actual working model of a milk condensing plant in miniature will be exhibited by Pet Milk Company.

This exhibit offers an opportunity to obtain information about the production of Irradiated Pet Milk and its uses in infant feeding and general dietary practice. Miniature Pet Milk cans will be given to each physician who visits the Pet Milk Booths.

PETROLAGAR LABORATORIES, INC., Booth 85

This year Petrolagar Laboratories, Inc. will offer, in addition to samples of the Five Types of Petrolagar, an interesting selection of descriptive literature and anatomical charts. Ask the Petrolagar representatives to show the HABIT TIME booklet. It is a welcome aid for teaching bowel regularity to your patients.

PHILIP MORRIS & CO. LTD. INC., Booth 33

Philip Morris & Company will demonstrate the method by which it was found that Philip Morris Cigarettes, in which diethylene glycol is used as the hygroscopic agent, are less irritating than other cigarettes. Their representative will be happy to discuss researches on this subject, and problems on the physiological effects of smoking.

PICKER X-RAY CORPORATION, Booth 109

Visitors at the Picker X-Ray Corporation's booth will have an opportunity of seeing the well-known Picker-Waite "Century." This diagnostic unit provides for radiography and fluoroscopy in all positions from the vertical to the Trendelenberg. The table may be either hand or motor operated, and the table has an optional equipment, a two position spot film attachment for instantaneous radiography during fluoroscopy.

There will also be on display a number of newly developed x-ray accessories and diagnostic opaque chemicals.

PROLARMON, INC., Booth 56**RALSTON PURINA COMPANY, Booth 17**

Ralston Purina Company cordially invites Illinois physicians to register at their booth, to receive:

Low Calorie Diets — 1200 and 1700 calories — complete diets giving wide variety of foods.

Allergy Diets — wheat, egg and milk-free food lists and special recipes.

Laboratory Research Reports — on whole grains and their importance as a source of vitamins and minerals in the diet.

Samples of Ralston Wheat Cereal and Ry-Krisp, the Whole Rye water.

W. B. SAUNDERS COMPANY, Booth 71

This publishing house will have on display their complete line of books of interest to physicians and specialists. Of particular interest are Graybiel & White's "Electrocardiography in Practice," the new Griffith & Mitchell's "Pediatrics," Krusen's new "Physical Medicine," Novak's "Obstetrical and Gynecological Pathology," Walters & Snell's "The Gallbladder and its Diseases," the new (1941) Mayo Clinic Volume, Pelouze's "Office Urology," the current series of the Medical Clinics of North America with their Symposia on common, everyday diseases and conditions, the new Cecil's "Medicine," new Ewing's "Neoplastic Diseases," Wilder's "Clinical Diabetes," and a number of other important new books and new editions.

SCHERING CORPORATION, Booth 15

The Schering exhibit actually displays the entire group of highly advanced Schering hormone preparations (including Oretin-M, the new orally effective tablets for male hormone therapy), distinguished for their potency, absolute purity, and economy in actual practice. Other specialized products of interest include Neo-Iopax, the Council-accepted urq-

graphic medium, and a new preparation of Ludozan, the antacid having strikingly valuable physiological properties. Members of the Medical Research Division are present to discuss endocrine or other problems.

G. D. SEARLE & COMPANY, Booths 73 and 74

G. D. Searle & Co. present the Phantoscope. This ingenious device accurately reproduces the fluoroscopic appearance of a chest and illustrates the alterations in cardiac pace, rhythm and contour in a variety of pathologic heart conditions. A number of Searle representatives will be in attendance at this exhibit, and will be pleased to confer with members of the profession concerning Searle Products.

SHARP & DOHME, INC., Booth 88

Sharp & Dohme will have their new modern display this year, featuring 'Delvinal' Sodium, 'Lyovac' Bee Venom Solution, and other 'Lyovac' biologicals. There will also be on display a group of new biological and pharmaceutical specialties prepared by this house, such as 'Propadrine' Hydrochloride products, 'Rabellon,' 'Padrophyl,' 'Riona,' 'Depropanex,' and 'Ribothiron.' Capable, well-informed representatives will be on hand to welcome all visitors and furnish information on Sharp & Dohme products.

S. M. A. CORPORATION, Booth 72

Among the technical exhibits at the convention this year is an interesting new display which represents the selection of infant feeding and vitamin products of the S.M.A. Corporation.

Physicians who visit this exhibit may obtain complete information, as well as samples, of S-M-A Powder and the special milk preparations — Protein S-M-A (Acidulated), Alerdex and Hypo-Allergic Milk.

SMITH, KLINE & FRENCH LABORATORIES, Booth 92

Smith, Kline & French Laboratories will exhibit their line of Medical Specialties at the meeting this year. The latest information on these products will be available, and the representative will be delighted to discuss these preparations with interested physicians.

E. R. SQUIBB & SONS, Booth 97

A number of new and interesting Vitamin, Glandular, and Biological and Chemotherapeutic Specialties will be featured in the Squibb Exhibit.

Well informed Squibb Representatives will be on hand to welcome you and to furnish any information desired on the products displayed.

STANDARD X-RAY COMPANY, Booth 82

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The Fourteenth Annual Convention Of The Woman's Auxiliary To The Illinois State Medical Society CHICAGO, ILLINOIS

TUESDAY, MAY 20, 1941

- 9:00 A.M. Registration — Palmer House Club Building.
- 10:00 A.M. Pre-Convention Board Meeting. (For Board Members only)
Mrs. Harry J. Dooley, presiding.
- 11:00 A.M. Symposium on Problems of the Auxiliary. (Open to all physicians' wives and guests)
Mrs. Wm. Raim, presiding.
- 12:30 Luncheon — Palmer House.
(Open to all physicians' wives and guests)
Mrs. Harry J. Dooley, presiding.
Mrs. John Wolfer, Local Chairman.
- Invocation—The Reverend George L. Warth, S. J., Regent of Loyola University.
- Greetings—Hon. Edward J. Kelly, Mayor of Chicago.
- Address of Welcome—Mrs. W. C. Bornemeier, Chicago.
- Response—Mrs. E. W. Burroughs, Ridgway.
- Address—Frank F. Maple, M.D., President, Chicago Medical Society.
- Convention Announcements, Mrs. E. Christofferson, Chicago.
- 2:00 P.M. Opening Business Session.
Credentials and Registration Report, Mrs. M. A. Nix, Princeton.
- Convention Announcements, Mrs. E. Christofferson, Chicago.
- Roll Call.
- Minutes.
- Treasurer's Report.
- Auditor's Report.
- Annual Reports of Officers.
- Annual Reports of Councilors.
- Adjournment until 9:30 A.M. Wednesday, May 21.

WEDNESDAY, MAY 21, 1941

- 9:30 A.M. Palmer House Club Building.
Memorial Services, conducted by Mrs. Clyde R. Landis.
- Solo — "Lord's Prayer."—Mrs. Louis Draeger
- In Memoriam.
- Memorial Roll Call.
- "Resignation" Longfellow.
- Candle Light Service.
- Remembrance Flowers.—Mrs. Clyde R. Landis.
- Music During Roll Call.—Mrs. Louis Draeger.
- One Minute of Silent Prayer.
- "Taps"—Bugler, Kenneth McDonald, Member of Ft. Dearborn Post Sons of American Legion.
- Roll Call.
- Reading of Minutes of previous meeting.
- Report of Credentials and Registration, Mrs. M. A. Nix, Princeton.
- Convention Announcements, Mrs. E. Christofferson, Chicago.
- Annual Reports of Chairmen of Standing Committees.
- Annual Reports of County Presidents.
- Reports of Special Committees.
- Report of Resolutions Committee.

- Final Report of Credentials and Registration Committee, Mrs. M. A. Nix, Princeton.
- Report of Nominating Committee.
- Election of Officers.
- Installation of Officers.
- Response—Mrs. Harry Otten, Springfield.
- Presentation of President's Pin—Mrs. R. K. Packard.
- Adjournment.
- 1:00 P.M. President's Luncheon — Palmer House Club Building.
Mrs. Harry Dooley, presiding.
Mrs. Frederick Tice, Local Chairman.
Co-chairman, Branch Presidents, Cook County Auxiliary.
- Greetings—Dr. J. P. Simonds, President-Elect, Chicago.
- Guest Speaker—Robert A. Bier, Captain M. C. Medical Division, Washington, D. C.
- 3:30 P.M. Post Convention Board Meeting. (Board members only)
Mrs. Harry Otten, presiding.

SOCIAL FUNCTIONS FOR ALL LADIES

TUESDAY, MAY 20, 1941

- 12:30 Luncheon—Palmer House Club Building.
- 3:45 P.M. Tour of the American Rooms in Miniature by Mrs. James Ward Thorne, Art Institute.
- 7:00 P.M. Dinner—Lake Shore Club, 850 N. Lake Shore Drive.
- Fashion Review, Saks Fifth Avenue.
(Private parking for cars.)

WEDNESDAY, MAY 21, 1941

- 1:00 P.M. President's Luncheon—Palmer House Club Building.
- 4:00 P.M. Musicale—Tea—Arts Club, 400 N. Michigan Avenue.
Mrs. Nelson Percy, Local Chairman.
- 7:00 P.M. President's Dinner—Palmer House.

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Original Articles

THE SURGICAL TREATMENT OF LEG LENGTH DISCREPANCIES

PAUL H. HARMON, PH.D., M.D.

CHICAGO

AND

WILLIAM M. KRIGSTEN, M.D.

SIOUX CITY, IOWA

Inequality of leg length is a frequent cause of unsightly gait which must always be remembered in analyzing disability in the lower extremities. Inequality in leg length may remain as the important residual disability after the causative disease has long since been brought under control. In previous decades, the orthopaedic surgeon was content to prescribe a raised shoe or other appliance, but in recent years the comparative safety of aseptic bone surgery and the development of good technical methods of shortening or of elongating the long bones have caused such palliative measures to become antiquated except when indicated for minor discrepancies of leg length. Most leg length discrepancies of one to four or five inches can be eliminated by an appropriate surgical procedure. Such methods should be applied as early as possible in life (with certain limitations which are technical in nature and which are applicable to individual methods) to avoid personality maladjustments. They are rarely indicated after the twenty-fifth year and, indeed, from the twentieth year onward these surgical procedures definitely carry increased risks. The causes of unequal leg length are given in table 1. Infections, poliomyelitis and trauma are the causes that are most commonly encountered.

Physiology of Bone Bearing Upon Longitudinal Growth Disturbance. Closure of epiphyseal lines by trauma associated with fractures through an epiphyseal line or by traumatic epiphyseal slip are a common place observation. Compere¹ states "fourteen per cent. of all the fractures of the long bones in children demonstrated growth arrest." In fractures of the shaft of the femur in young children with shortening the result of overriding, there may be equalization of limb

length by compensatory overgrowth at the metaphyses of the bones of the shortened leg. David² states "that compensatory overgrowth of a shortened femur after the fracture may be expected in a growing child and is of extreme importance." Shortening of one-half to one inch was equalized in 5 to 15 months. However, the older the child, the less the amount of compensation. A difference of leg length up to one inch or slightly more may be concealed by tilting the pelvis.

Involvement of the epiphyses about the knee is likely to contribute more shortening than those at the hip or about the ankle, since Bisgard and Bisgard³, testing by experimental methods the observations of Digby⁴ upon human long bones, found "the proportion of longitudinal growth upon the two ends of a long bone to be unequal. The percentages of growth (given below) are almost identical with those obtained by Digby." Hatcher⁵, after making careful stereoteleoroentgenographic measurements of the bones of the lower extremity, confirmed the above authors but stated that "growth occurred irregularly in many cases and could not be definitely predicated with enough certainty to be a guide upon which to base growth arrest operations except in a general way." Wilson and Thompson made a comparative analysis of different methods of equalizing leg length. They conclude "epiphyseal arrest in comparison with the other operative methods has the advantage of being a relatively minor surgical procedure. Careful calculation is necessary to determine the age at which the operation should be performed and which epiphyses should be fused. Complete fusion must be obtained in order to avoid any danger of later deformity due to assymetric growth. Its only drawback is that its application is limited to the growing period. Leg lengthening is a formidable procedure and frequently attended by serious complications. Its use should be limited to patients who are too old for epiphyseal arrest and who are unwilling or unable to sacrifice height. Leg shortening is a relatively simple and safe procedure. The maximum correction so far reported is approximately three inches."

TABLE I. THE CAUSES OF INEQUALITY OF LEG LENGTH

1. Fractures
 - (a) With overriding
 - (b) Into the epiphyseal line creating growth arrest
2. Bone Infections

Read in part in the Section on Surgery at the 87th Annual Meeting of the Illinois State Medical Society, Peoria, May 19, 1937.

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- (a) Pyogenic osteomyelitis
- (b) Tuberculosis
- (c) Variola
- (d) Syphilis

The above conditions produce shortening by loss of bone or by premature closure of the epiphyseal line.

3. Bone Tumors

- (a) Enchondromata
- (b) Exostoses
- (c) Fibrocystic disease
- (d) Neurofibromatosis

4. Congenital Abnormalities

- (a) Congenital absence or malformation of bones
- (b) Arteriovenous aneurisms
- (c) Hypertrophy, regional or hemihypertrophy

5. Disuse retardation of growth

- (a) Residual of poliomyelitis
- (b) Prolonged cast immobilization in growing children

The consensus of opinion of the various authors who have studied growth is that approximately 12, 40, 28 and 20 per cent. of the growth of long bones in the lower extremity occurs at the upper femoral, lower femoral, upper tibial and lower tibial epiphyses respectively. Hallock and Toomey⁷ found that operative fusion of the hip in very young children when the epiphyseal line is of necessity damaged or bridged by bone grafts, results in very little or no shortening. "There was a relatively high percentage of failure in the 1 to 5 year group." The same thesis has been, in general, experimentally demonstrated by Compere, Garrison and Fahey⁸ and by Harmon and Adams⁹ in children where the capital femoral epiphysis has been destroyed by suppuration. Compere, Garrison and Fahey found that "surgical trauma to the epiphyseal cartilage plate of the head of the femur produced an irregular contour of the head of the femur and a functional shortening of the shaft of the femur." Harmon and Adams found "no shortening in following cases of suppurative hip disease, even though the capital femoral epiphysis had been destroyed at an early age."

Elongation of bone produced by abnormal vascularity or by disease in the region of the metaphysis is occasionally observed, but this is not as common as is shortening due to disease. Horton¹⁰ reported cases in children where arterio-venous aneurisms caused lengthening of bones on the diseased side. He states "congenital arterio-venous fistula of the lower extremities should not be confused with ordinary cases of varicose veins. The increased heat in the

extremity, the increased length and size of the extremity, should serve to differentiate the two conditions." Pyogenic foci in the metaphyses, especially if untreated, may stimulate a bone to grow excessively. Most of such overgrowth is either of relatively small extent or is compensated by growth in later years. For a long time it was believed that unilateral lumbar sympathetic ganglionectomy or ramisection would cause stimulation in growth of the homolateral limb as when atrophied from the after-effects of poliomyelitis. However, it has now been shown experimentally by Bisgard¹¹ and by careful tele-roentgenographic measurements in growing boys by Fahey¹² that such operations have no consistent effect on the longitudinal growth of an extremity. Bisgard states "the tibiae on the sympathectomized sides have at no time evidenced an increased rate of growth in comparison with the controls of the normally innervated extremities." Fahey states "the influence of this increased vasodilatation, with its associated increased warmth of the limb, on longitudinal growth is doubtful because it is not comparable to overgrowth produced by pathological processes for in these conditions passive hyperemia is present."

This question needs restudy under carefully controlled conditions which will utilize more careful measurements.

Operative Slowing of Growth of the Leg. Phemister¹³ was the first to advise that operative arrestment of longitudinal growth be applied to the bones of the longer extremity and described the operative technique that would result in cancellation of epiphyseal growth. This procedure was described as follows: "A piece of cortex, three centimeters long by one to one and a half centimeters wide, is excised, crossing the cartilaginous line and including about one centimeter of the epiphysis. The sides of the cartilaginous disc, anterior and posterior to this, are chiseled out to a depth of approximately one centimeter and the transplant reinserted with its ends reversed." Thorough and equal disruption of the line of enchondral ossification in the juxta-epiphyseal zone is necessary, since in two of the cases in this series there was evidence of unequal cancellation of growth on the two sides with deformity. Campbell¹⁴ reported "two cases of slight knock-knee following this operation. Another patient developed a definite genu recurva-

tum deformity after three years of growth subsequent to epiphyseal arrest."

This method is applicable for equalization of leg length only during the latter half of the growing period. It has a definite field of usefulness, but the greatest care must be practiced in selecting cases for the operation, especially in selecting the appropriate age for a given amount of shortening. There is no mathematical formula for obtaining an exact amount of leg equalization by this method. Even when performed under proper indications, the results are occasionally uncertain. Other factors such as the number of epiphyses to be closed and the age at which the operation is to be done should be carefully evaluated. The data given by Hatcher⁵ are of extreme value in calculating the probable shortening to be obtained at various ages, since his measurements were obtained by teleroentgenograms. The variability of arrest of longitudinal growth is well illustrated by his material and by the reports of Wilson and Thompson and Campbell. The usual mistake is failure to operate at a sufficiently early age and to arrest enough epiphyses. Data should be available upon racial and familial growth expectancy, the total leg length of the patient and length of each bone. Cognizance should be taken of sex, since longitudinal growth ceases from two to four years earlier in girls than in boys.^{5, 15, 16 and 17.} This information can be obtained more accurately by stereoteleroentgenograms of the extremities. The approximations based upon the work of Baldwin¹⁵ are given in Table 2. He states "Girls reach their maximum period of growth earlier than the boys. With both groups there is a tendency for the curves to fan out as age increases. There is a slight adolescent acceleration which appears earlier for the girls than the boys. The taller boys and taller girls both reach their periods of maximum growth and periods of diminution of growth earlier than do the shorter boys and girls. The increment of growth in height is comparatively uniform for each individual, so that the growth curves enable one to prophecy with a high degree of accuracy how tall a child of normal growth will be in the subsequent age. In brief, tall children do not become short; neither do short children, as a rule, become tall."

The most accurate measurements of growth increments for each bone at various ages in chil-

dren are available in the article by Hatcher.⁵ For three inches shortening at the age of eight in girls and eleven in boys it is generally necessary to arrest more than one epiphysis, usually the two at the knee, since they together contribute more than 70 per cent. of the total limb growth. Prior to these ages for this or greater shortening it is advisable to arrest only the lower femoral epiphysis or a tibial and fibular epiphysis at one end. The patient should be observed carefully and other epiphyses closed as soon as it is determined that the original closure is not being effective in equalizing the limbs. These general indications should be modified in light of the accessory data for age, sex and leg discrepancy given above. For example, members of the southern European races where short stature is the rule should be operated on at a relatively early date. Past the age of eleven or twelve in girls and thirteen to fifteen in boys, this operation should rarely be done, as very little or no longitudinal growth can then be expected in the long bones. Roentgenograms of the ends of the bones should always be obtained prior to operation after the age of nine in girls and twelve in boys to be certain that premature closure of the epiphyseal line has not occurred. In over three thousand miscellaneous orthopedic cases under the age of twenty-one years, seen by the author during 1938 and 1939, the growth arrest operation was recommended only eight times. In forty-three cases of predominately unilateral acute poliomyelitis, followed for the past five years by the author, none have developed enough shortening to warrant a limb equalization of any kind. Of these cases, twenty-seven passed through the pre-adolescent growth period during this time.

TABLE 2. AVERAGE NORMAL GROWTH TO BE EXPECTED FROM LOWER EXTREMITY
(Calculated from data of Baldwin¹⁵)

AGE	MALE	FEMALE
7	28.88	21.05
8	26.47	18.39
9	23.26	16.02
10	20.14	12.16
11	17.07 cms.	8.37 cms.
12	14.34	6.40
13	10.70	3.51
14	7.27	1.80
15	4.24	.52
16	2.09 cms.	.14 cms.

Equalization of Leg Length by Shortening the Long Leg. Shortening of the longer sound limb by excision of a portion of the diaphysis has been reported repeatedly in the surgical literature but

has not become popular until the past few years. The literature upon this operation has been reviewed by Harmon and Krigsten.¹⁸

The methods of operative shortening are all more simple than the methods of operative lengthening. In addition, the likelihood of disaster is slight in the shortening operation, while

indicated. The site of election for shortening is either at the junction of the middle and lower thirds of the femur or in the middle third of the femur. Only the mathematically exact methods are described here, since shortening by allowing the osteotomy fragments to override is inexact and difficult to control, unless pins are

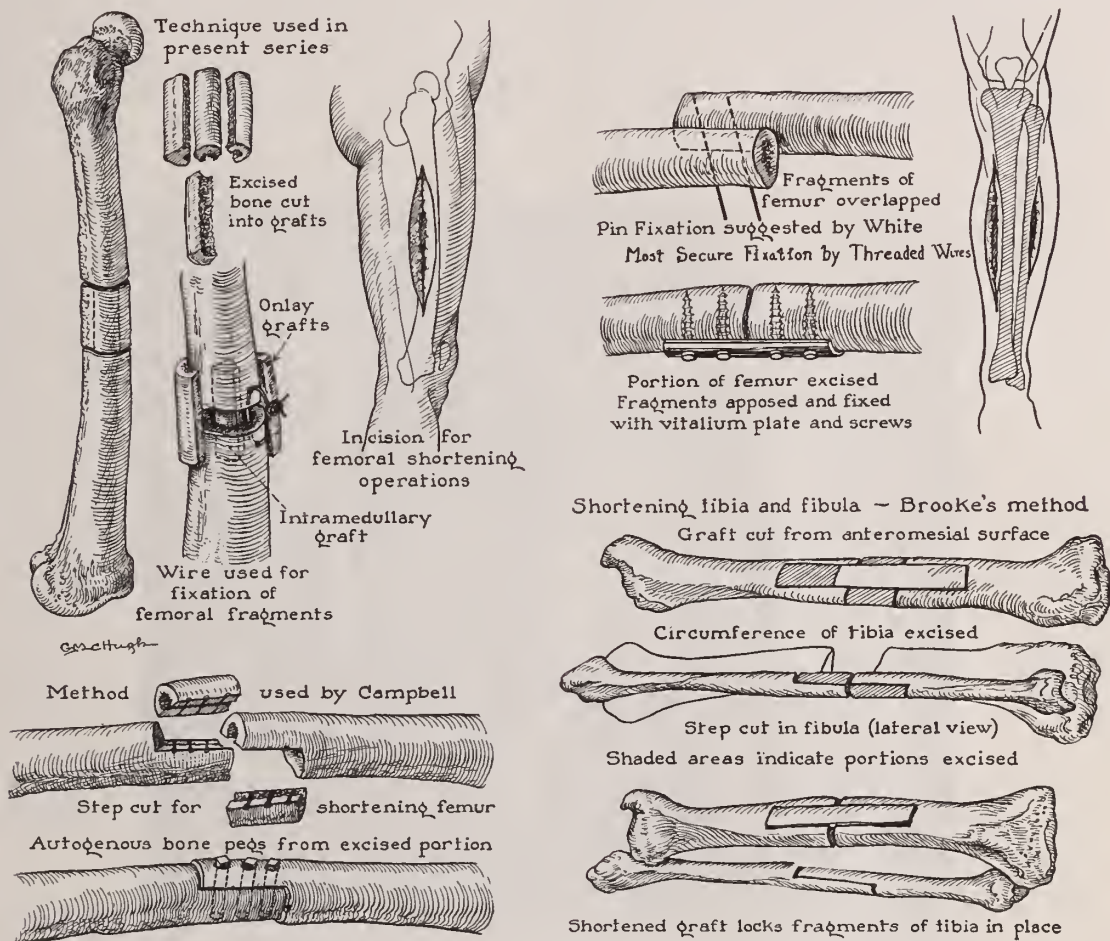


Figure 1. Methods of shortening the bones of the longer sound extremity. The method of resection, with the use of intramedullary and onlay grafts was

employed in the majority of cases of this series.

Illustration by courtesy of Surgery, Gynecology and Obstetrics.

unfavorable complications are common during the lengthening procedure. This method of leg length equalization has an extensive field of application, since it is mathematically accurate when the more exact methods are employed. The risk is greater than in the epiphyseal arrest operation but not sufficiently so to prevent wide application. Either the tibia or femur may be shortened as much as three inches (occasionally four inches in persons of exceptionally long sound limbs, but the femoral shortening operation is usually more applicable and is more often

used to transfix the fragments.

The technique employed in shortening the femoral diaphysis in this series of cases is shown in Figure 1. The mid-shaft of the femur is approached along the postero-lateral intermuscular septum. The periosteum is incised and stripped only for the length of the proposed shortening. A gigli saw or a motor driven cross-cut saw is then used to sever the bone transversely at the upper limits of the proposed shortening which, in the femur, is usually at the junction of the middle and lower thirds. The distal frag-

ment is angulated allowing its proximal end to protrude from the wound. The excised bone is then split into several fragments, one of which should be of sufficient size to serve as a snugly fitting intramedullary graft. It should increase in diameter from above downward according to the width of the medullary canal. The remaining pieces of bone are used as onlay grafts to bridge the osteotomy site. Bronze-aluminum wire, which has been used in seven cases in this series, as illustrated, aids in preventing separation of the bone ends. It is, however, not essential. An

alternative technique, advocated by Campbell,¹⁴ is shown in the insert, and the method of tibial shortening described by Brooks is also shown. His accurate step cut operation in the fibula is not essential. Such modifications are technically more difficult and require wider periosteal stripping. They have the merit of preventing angulation by internal fixation. The same effect has been obtained by attaching an onlay graft to the lateral cortex with either autogenous bone pegs or with screws. Vitallium plates and screws have come into favor during recent years.

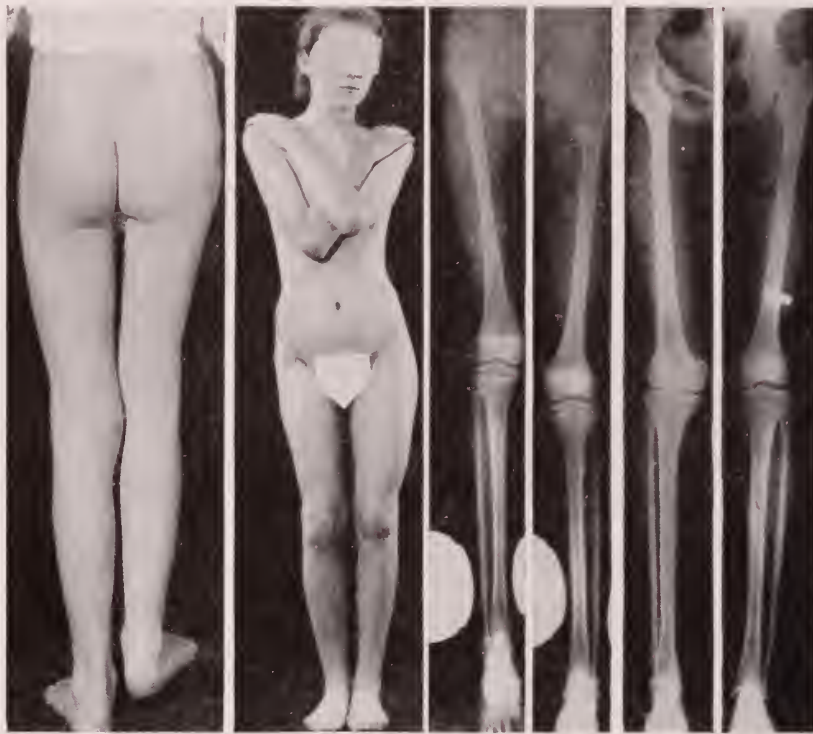


Figure 2. Case (V. H.), illustrative of leg equalization obtained by epiphyseal growth arrest on the distal (left) femur, and subtrochanteric osteotomy at the right hip.

- (a) Appearance prior to operation. The right hip is solidly ankylosed due to quiescent tuberculosis; this leg to clinical measurement is four inches (10 cms) shorter than the left. Teleroentgenographic measurements show the right leg to be 3.0 cms. shorter than the left.
- (b) Anterior view of the same patient, five years later. Note that the left knee is slightly higher than the right, but that there is equalization of leg length and a good stance. This result was achieved largely by subtrochanteric osteotomy and abduction of the distal right fragment.

- (c) Teleroentgenograms of both lower extremities taken at the time of the growth equalization procedure. Note that the tibiae are of equal length and that the shortening is to some extent due to superior displacement and malposition (adduction) of the left femur.
- (d) Teleroentgenograms of the lower extremities seven years after growth arrest operation. Note correction of the deformity of the right hip by osteotomy and that the left tibia is now longer than the right. However, in standing, the level of the ankle joints is approximately the same. Measurement of the teleroentgenograms showed that the patient had actually gained but 1.6 cms. on the right side.

Teleroentgenograms and teleroentgenographic measurements by courtesy of Dr. C. H. Hatcher.

Illustration by courtesy of Surgery, Gynecology and Obstetrics.

Whether used for fixation or not, the autogenous bone grafts derived from the excised segment should be added as onlay grafts. In the last seven cases we have done, the Z-step cut (Campbell) has been utilized but the fragments have been immobilized by internal fixation with vitallium screws.

Operative Lengthening of the Bones of the Lower Extremity. These operations should be considered only in light of the indications presented by each patient and with full knowledge of the risks involved in operation, as the experiences recorded during the past fifteen years have demonstrated the many complications that can arise after these operations have been performed. The detailed technique of operation and types of apparatus to be used for this purpose will not be described here, as they can be found in the original descriptions, the literature of which has been summarized elsewhere.^{6, 14, 18}

The operative principles which should be employed are the following: there must be complete control of both fragments by pins inserted through the bone which are mounted in a suitable apparatus to regulate angulation and the rate and extent of lengthening. When the operation is performed, stripping of the periosteum should be limited to the bony area involved in the osteotomy and the length of the osteotomy should not greatly exceed the desired lengthening. An

oblique or preferably a Z-osteotomy may be performed. In case of the leg certain soft tissue structures and the fibula should be incised to avoid angulation and other complications. The modification described by Compere,¹⁸ consisting of the addition of a large tibial bone graft to the osteotomy site, is an advantage, as this extra bone shortens the period of disability and lowers the incidence of malunion and nonunion.

RESULTS INCLUDING ILLUSTRATIVE CASES EPIPHYSIODESIS

This operation has been applied to over 120 patients at the University of Chicago Clinics, many having had more than one epiphyseal line closed. There have been no postoperative infections or deaths. The short leg has overgrown the sound leg upon which the operation was performed in two patients, one by a half inch and the other by an inch. There is no resultant limp or other disability in these two cases, as they were able to compensate by tilting the pelvis. In several cases, especially in girls, the desired retardation of the sound leg was not obtained as the operation was performed too late. The general tendency has been to operate too late rather than too early in the growth period and to arrest growth at the knee only in the femur when now the tibial and fibular epiphyses would also be



Figure 3. Case A. C., illustrating operative shortening of the longer femur.

- (a) Appearance of patient four years after shortening the right femur.
- (b) Antero-posterior roentgenograms of the short-

- ened right femur in the cast immediately after operation and on the occasion of a cast change.
- (c) Composite roentgenograms of the femurs four years after the femoral shortening.

Illustration by courtesy of Surgery, Gynecology and Obstetrics.

V. H., Figure 2, was 11 at the time (February 10, 1932) of closure of the lower femoral epiphysis of the sound left limb, which was four inches (10 cms.) longer to clinic measurement. The actual discrepancy in the bones was but 3.0 cm. (teleroentgenographic measurements). This shortening was due to tuberculosis in the contralateral hip, which was firmly ankylosed in some adduction at the time of the operation for growth equalization. The legs were found equal in length on examination on January 1, 1935, the patient having been able to discard her built-up shoe eight months previously. In the interval a subtrochanteric osteotomy had also been performed to correct the adduction deformity. When last seen (April, 1939), her gait was excellent, the tuberculous process still quiescent, and she was well satisfied with the results of all the corrective operations.

DIAPHYSEAL RESECTION FOR SHORTENING THE LONGER EXTREMITY

At the time of this report, we have observed or operated upon thirty-five patients who have had operative shortening of the femur of the sound extremity, all having more than two inches discrepancy due to previous disease or atrophy in the opposite leg. Half of these cases have been operated upon by the authors. The results have been excellent save in one case where infection followed with loss of bone grafts and with persistence of slight angulation of the femur. Union, however, occurred in all cases. Some angulation of the upper fragment occurred in three other cases, but this was corrected by change of cast before bony consolidation was complete.

A. C. (Figure 3), female, who was 20 at the time (August, 1936) of excision of two inches of bone from the right femoral diaphysis presented an inequality of leg length of two and three-quarters inches due to tuberculosis of the opposite hip and knee. The hip had been held by a fibrous ankylosis. Resection of this knee was performed in May, 1935, with prompt osseous union. The additional shortening occasioned by the latter operation had led to the development of equinus in the foot of the short limb, and the foot became painful due to excessive strain. Her gait was improved as a result of the shortening operation, and pain has been absent in the left foot, as the equinus position is no longer necessary in walking.

LEG LENGTHENING OPERATIONS

Eleven operations have been performed, four on the tibia and seven on the femur, on ten different patients. Death from cellulitis and septicemia occurred in one patient who had moderate amyloid disease that was undetectable by the Congo red test. Moderate infection, fol-

lowed by massive sequestration of portions of the femoral diaphysis occurred in two other patients. In one of the latter, a stiff knee also resulted. Most of these cases have previously been reported by Compere¹⁸ and will not be presented individually here. In one instance, tibial lengthening was performed upon the leg that had undergone operative lengthening of the femur.

R. B., male, was seventeen years of age when first seen. At this time the left leg was six inches (14.5 cms.) shorter than the right, this being due to atrophy incident to three years immobilization of the left hip by a cast for the treatment of tuberculosis. The cast treatment had not resulted in bony ankylosis, but there had been no pain or other symptoms for six years, and fifteen degrees of passive motion remained at the left hip. The tuberculosis was considered quiescent. Both the femur and tibia were lengthened, eight and a half months elapsing between operations. The femoral lengthening of two and three-quarters inches was obtained over a period of three weeks. Union was present two and a half months after operation. Two and a half inches increase in length of the left tibia was then obtained using the Moore modification of the Abbott apparatus. The patient was last seen five years after the first operation was performed. At this last date he had only a half-inch discrepancy in leg length, as determined by clinical mensuration, and walked with only a slight limp that was due mainly to the abnormality of the left hip.

SUMMARY AND CONCLUSIONS

1. Cases illustrative of three surgical methods that are used to equalize leg length are presented.
2. The indications and special conditions appropriate for each are enumerated.
3. Epiphyseodesis or epiphyseal arrest is the most conservative surgical method. It has a limited field of usefulness, defined as the seventh to the twelfth years, depending on the amount of shortening.
4. More study of growth rates under normal and especially pathological conditions is indicated. Under certain conditions compensatory growth probably occurs and the importance of the capital femoral epiphysis is minimal. When growth is more fully understood and cases can thus be better selected for epiphyseodesis, better results will be obtained. There is some uncertainty as to the degree of equalization that will be obtained, and undercorrection instead of overcorrection has been the most frequent undesirable result. Undercorrection can probably be eliminated by more careful selection of patients and earlier operation.

5. The most exact and universally applicable method is operative shortening of the sound extremity. Leg shortening is the most exact and frequently indicated operation in adults and adolescents. The extent of its usefulness and restriction in younger children has not yet been satisfactorily determined.

6. Leg lengthening is indicated in certain patients who are short of stature but should only be performed by a limited group of surgeons who are experienced in the field.

BIBLIOGRAPHY

1. Compere, E. L., Growth Arrest in Long Bones as a Result of Fractures that include the Epiphysis, *J. A. M. A.* 105: 2140, 1935.
2. David, V. C., Shortening and Compensatory Overgrowth Following Fractures of the Femur in Children, *Arch. Surg.* 9: 438, 1924.
3. Bisgard, J. D., and Bisgard, M. E., Longitudinal Growth of Long Bones, *Arch. Surg.* 31: 568, 1935.
4. Digby, K. H., The Measurement of Diaphyseal Growth in Proximal and Distal Directions, *Jour. Anat.* 50: 187, 1916.
5. Hatcher, C. H., Surgical Arrest of Longitudinal Growth (Epiphyseodesis) for Correction of Leg Inequality of the Lower Extremity, Personal Communication.
6. Wilson, P. D., and Thompson, T. C., A Clinical Consideration of the Methods of Equalizing Leg Length. *Ann. Surg.* 109: 992, 1939.
7. Hallock, H., and Toomey, J. W., Jr., Hip Joint Tuberculosis Treated by Fusion Operation: An End-result Study of One Hundred and Seventy Unselected Cases, *J.A.M.A.* 103: 1836, 1934.
8. Compere, E. L., Garrison, H., and Fahey, J. J., Deformities of the Femur Resulting from Arrestment of Growth of the Capital and Greater Trochanteric Epiphyses, *Jour. Bone and Joint Surg.* 22: 909, 1940.
9. Harmon, P. H., and Adams, C. O., Pyogenic Arthritis with Special Reference to Dislocation and Treatment, *Proc. Institute of Med. of Chicago* 11: 224, 1937; Paper Read at the Annual Meeting of the American Academy of Orthopaedic Surgeons, January 18, 1939.
10. Horton, B. T., Hemihypertrophy of Extremities Associated with Congenital Arteriovenous Fistula, *J.A.M.A.* 98: 373, 1932.
11. Bisgard, J. D., Effect of Sympathetic Ganglionectomy upon Bone Growth, *Proc. Soc. Exper. Biol. and Med.* 29: 229, 1931; Longitudinal Bone Growth; The Influence of Sympathetic Denervation, *Ann. Surg.* 97: 374, 1933.
12. Fahey, J. J., The Effect of Lumbar Sympathetic Ganglionectomy on Longitudinal Bone Growth as Determined by the Teleroentgenographic Method, *Jour. Bone and Joint Surg.* 18: 1042, 1936.
13. Phemister, D. B., Operative Arrestment of Longitudinal Growth of Bones in the Treatment of Deformities, *Jour. Bone and Joint Surg.* 15: 1, 1933.
14. Campbell, W. C., Operative Orthopedics, C. V. Mosby Co., St. Louis, 1939.
15. Baldwin, B. T., The Physical Growth of Children from Birth to Maturity, University of Iowa Publications, 1921.
16. Todd, T. W., Atlas of Skeletal Maturation, C. V. Mosby Co., St. Louis, 1937.
17. Flory, C. D., Osseous Development in the Hand as an Index of Skeletal Development. Monographs of the Society for Research in Child Development, Vol. 1, No. 3, 1936.
18. Harmon, P. H., and Krigsten, W. M., The Surgical Treatment of Unequal Leg Length. *Surg., Gynec. and Obstet.* 71: 482, 1940.
19. Compere, E. L., Indications for and Against the Leg Lengthening Operation, *Jour. Bone and Joint Surg.* 18: 692, 1936.

CLINICAL APPLICATION OF SULFANILAMIDE, SULFAPYRIDINE AND SULFATHIAZOLE

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For purposes of convenience I will confine my remarks to the clinical use of the two of the three foregoing drugs because a general discussion of chemotherapy including the pharmacology and experimental therapeutics of all three would hardly seem practical in the time limited to our discussion tonight.

Sulfanilamide, as we all know, began to be used in this country in 1936 and since 1937 has taken not only the profession but the laity by storm. Negroes in New Orleans were treating their venereal disease on the street corners by eating sulfanilamide which they bought readily at any drug store. While having occasion to visit a friend's house last year I noticed a bottle of sulfanilamide tablets in the medicine chest. Upon further inquiry my hostess replied, "Nobody is ill now, but I always keep a bottle on hand, you know, like aspirin, for colds and such." It happened that I was not sufficiently well informed to contend the issue, but I decided with amazement to investigate as thoroughly as I knew how the indications and contra-indications of this drug which we all had been using to such a wonderful advantage.

The one man in this country who has undoubtedly done more work than anybody else in the world is Dr. Perrin Long of Johns Hopkins University. His monograph, "The Clinical Use of Sulfanilamide, Sulfapyridine and Allied Compounds" should be in every physician's library.

Surgeon General Thomas Parran recently made the statement that during the past year 187 tons or approximately 373,875 pounds of sulfanilamide were consumed in a single year, 1939. I cannot but help feel that much of this amount was taken injudiciously and would therefore like to stress that point throughout the first part of our discussion.

As we all know, sulphanilamide originated at the I. G. dye works in Elberfeld, Germany where it was a synthesized compound known as prou-

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tosil. Its connection with medicine was entirely accidental. The young director of experimental research at the dye works gave it to mice and found that subsequent lethal doses of streptococcus hemolyticus would not kill the mice.

Very slowly this work was repeated, confirmed and furthered on the continent and in England especially in connection with childbed fever.

Strangely enough knowledge of the marvelous curative properties of prontosil or sulfanilamide, as the American Medical Association named it officially, did not reach American doctors until some three years later. American doctors conversant with German Medical journals began to acquaint themselves with it individually, but never as a group was any information gleaned from the international abstract section of the Journal of the American Medical Association. Why this was overlooked nobody seems to know. Only since 1936 when American investigators confirmed the European claims of the power of this drug has it been used extensively in the United States and just how widely Doctor Par-ran tells us in his amazing article; 187 tons in a single year.

Sulfanilamide, unfortunately, has been tried in just about every disease known to mankind and for a very large number of these is absolutely worthless. However, there is a definite number of infections in which it may even be a lifesaving measure. It has been shown conclusively by Long and his associate that sulfanilamide may do more harm than good in a group of infectious diseases which include typhoid fever, staphylococcus furuncles and carbuncles, osteomyelitis, acute rheumatic fever, the common cold, influenza, Rocky Mountain spotted fever, arthritis and tuberculosis.

Sulfanilamide, as we all know, is peculiarly potent against the streptococcus hemolyticus, and has its greatest sphere of usefulness in the following pathological entities: puerperal sepsis, erysipelas, cellulitis, septicemia, scarlet fever, otitis media, pneumonia, meningitis, tonsillitis and peritonitis.

Puerperal fever, largely as the result of the English group, in the lying-in hospital type of patient, has been shortened in duration, the death rate reduced and the disabling complications prevented.

Erysipelas and cellulitis are known to kill patients by being converted into a general sepsis.

Sulfanilamide not only attacks the local area of infections but keeps the organisms from entering the circulating blood stream.

Septicemia has always had an extremely high mortality and its treatment very unsatisfactory. With the advent of sulfanilamide this infection has been reduced to a mortality of 20 to 30 per cent. only. Similarly, meningitis, the dread epidemic cerebrospinal fever, kills now only about 20 per cent. of its victims instead of the former 98 per cent.

While results are less dramatic in patients with streptococcal pneumonia and empyema, the drug is of benefit. It must never be substituted for surgical drainage, however, when pus has been demonstrated in the chest cavity.

Mention should be made of the treatment of acute tonsillitis and pharyngitis, the so-called septic sore throat. Sulfanilamide should be used in only those cases in which the streptococcus hemolyticus is the etiological agent. Even at this point there is no uniformity of opinion. Rhodes and Afremow cite a series of 31 cases of streptococcus hemolyticus sore throat with 37 controls in which the drug was not found to reduce the severity of symptoms, shorten the incapacity, reduce the incidence of complications or the duration of the carrier state. They conclude that sulfanilamide is a drug of proven value in severe infections of the deep structures due to the streptococcus hemolyticus, but in the average case of an uncomplicated strep sore throat its routine use is questionable. They do believe, however, that if complications supervene such as cervical adenitis, paranasal sinusitis, otitis media, mastoiditis or meningitis that chemotherapy is definitely indicated.

Although sulfanilamide and its related compounds, principally prontosil and sulfapyridine, were introduced primarily for the treatment of streptococcus infections it was soon observed to be of value in various other diseases. One of these is gonorrhea, the most prevalent of all social diseases. It has been estimated that upwards of one million cases of this type occur in the United States alone each year. Due to the mildness of the disease and the social stigma attached to it, many patients are the victims of gross mismanagement in the hands of quack, pseudo physicians. It is unfortunate in one respect that this drug has been found to be of value in this infection as it has resulted in many in-

fected individuals procuring and taking the drug without the supervision of a physician. Lacking confirmation of a cure after their discharge has ceased and the medication stopped, the latent or chronic form of the disease comes on during which it may be transmitted to others.

The question is ever broached, "How does sulfanilamide act?" Physicians have dodged the issue by saying that the chemical is bacteriostatic. However, as Long admits, the mechanism is not conclusive, but he does state definite evidence exists for an interference with the metabolic requirements of the cocci and bacteria rendering respiratory and reproductive and nutritional functions sufficiently inert so that the body's cellular defense mechanism can readily complete their destruction.

The toxicity of sulfanilamide is perhaps one of its most important phases for two reasons. First the patients themselves feel so miserable and secondly they may be made dangerously ill from the treatment alone.

We all know the group of symptoms which will only be repeated here for the sake of emphasis. The first is a group of symptoms related to the nervous system and include dizziness, headache, mental depression, nausea, vomiting and more rarely, personality changes. Usually with the exception of the latter two they are not considered sufficiently serious to warrant the withdrawal in bedridden patients. In ambulatory patients who are doing responsible work or driving motor vehicles, the statement does not apply.

It is important that the patient and his relatives have a knowledge of these manifestations so as not to cause undue alarm if and when they occur. It must be emphasized here and borne in mind continuously that sulfanilamide used indiscriminately and not under *daily* supervision is dangerous and may actually be a menace to the physical well-being of the person concerned. And to the contrary it may be of great value, even lifesaving in effect when used to advantage.

The majority of all patients taking sulfanilamide will develop varying degrees of cyanosis. In the face of no further signs this finding is never an indication for withdrawal of the drug, although the altered appearance oftentimes startles the relatives.

Of the more serious toxic effects are the drug fever, so-called, and granulopenia. Usually not

seen before the fourth day and often as late as the ninth, drug fever is an absolutely imperative indication for immediate withdrawal. Often it may be difficult to tell whether the rise in temperature is from the infection per se or the drug. Usually under full dosages after four days the temperature from the infection will subside and if a secondary rise is then encountered it may be assumed to be coming from the drug.

Daily blood counts for white cell estimation should be done whenever possible in patients receiving full doses of sulfanilamide. If the total white count falls below 4,500 a definite granulopenia exists from bone marrow depression, then therapy should be suspended at least for the time.

Rarely morbiliform or scarlatinal eruptions occur often limited to the soles of the feet or palms of the hands, accompanied by intense itching. Though not dangerous it is so discommoding to the patient that withdrawal is usually necessary.

Cases have been reported of acute hepatitis with jaundice and neuritis both optic and peripheral, but are so infrequent as to be of no theoretical importance.

Whenever sulfanilamide is being prescribed the patient should be at complete bed rest. Full dosages may therefore be given and, if present, toxicity may be noted more promptly. Needless to say, daily observation of the patient is absolutely necessary. A Minimum ingestion of 3 quarts of water is imperative for the proper elimination of sulfanilamide from the body. If constipation occurs, all saline cathartics are strictly contraindicated, as dehydration by way of the bowel tends not only to decrease its elimination, but concentrates sulfanilamide in the body beyond desirable levels. The slow elimination of such concentrated amounts would act deleteriously on the kidneys.

Late in 1938 investigations in England found that by substituting a nitrogenated benzyl group for the second hydrogen atom in the sulfanilamide compound a much more potent drug could be formed. This drug they termed M & B 693 or sulfapyridine. Peculiarly there were advantages as well as drawbacks to this new and more powerful compound. Its action on the pneumococcus and the gonococcus seems to be far more specific but the drug was absorbed more slowly and eliminated more incompletely. In addition

a larger proportion of the free drug upon absorption assumed a conjugated form.

Lobar pneumonia, one of the commonest causes of death the world over, since the introduction of sulfapyridine, has been rendered a comparatively innocuous disease. Large series of cases treated with the drug have been reported the past 18 months and the mortality rate ranges as low as from 12 to 7 per cent. Chemotherapy has not replaced type specific serum therapy, but whenever possible should always be used as an adjunct. Often facilities do not allow for isolation, typing and administration of specific serum, and then again there may be serum hypersensitivity present. It is in these cases that sulfapyridine is of maximum benefit.

Long claims that in his experience it is not necessary, as with sulfanilamide, to administer bicarbonate of soda because sulfapyridine supposedly does not create an alkali deficit type of acidosis. Conflicting reports occur on this matter, however, some claiming that the nausea and vomiting encountered in 30 to 50 per cent. of the cases is due to an acidosis.

The dosage of sulfapyridine in pneumococcic pneumonias in the medical service at the Johns Hopkins hospital has had transient variations with perfection of knowledge of the new drug, but in general may be interpreted as follows:

1. 3 to 4 grams — initial dose given as soon as the diagnosis is established.
2. 1 gram dose every four hours until the temperature has been normal for 48 hours.
3. 1 gram every 6 hours for 4 to five days of uninterrupted convalescence
4. $\frac{1}{2}$ gram T. I. D. until ambulatory when it is discontinued. For infants and children the dosage is regulated up to 1 to 2 grams per kilo of body weight. The total dose is divided into 6 or 4 parts and given every four to six hours.

Lloyd, Durd and McGregor-Robertson, English investigators were the first to employ sulfapyridine in the treatment of gonorrhea. In dosages of 45 grains $2\frac{1}{2}$ grams daily for six to ten days, the results were most gratifying with the one exception in regard to the criteria for cure. No bacteriological cultures were performed. McGregor-Robertson combined the sulfapyridine therapy with local irrigations and reported a clinical cure of 75 per cent. in a large series of cases.

Wichengrad at the Central Venereal Clinic in New York City, which is probably the largest clinic of its kind in the world, reported upwards of 98 per cent. clinical cures in males and about 88 per cent. in women by combining sulfapyridine with the gonococcal bouillon filtrate of Parke-Davis. He immunizes his patients for two weeks with from 1/20 to 1/40 cc. of the filtrate tri-weekly and then gives heavier initial doses of the sulfapyridine up to 5 or 6 grams and tapering down to a maintenance dose of 3 to 4 grams. Higher dosages are necessary with sulfapyridine to maintain a substantial blood level because of the large percentage of the free drug to undergo the conjugated form in the body. In the latter clinic it was found that sulfanilamide failed to cure cases in as high as from 40 to 65 per cent. of the patients. Such has been our experience in private practice and since adopting his method of combination sulfapyridine-filtrate therapy results have been very gratifying.

In a personal communication he especially noted the fact regarding criteria for cure, the failure of the filtrate to produce an intercutaneous reaction nearly always coincided with the inability to recover the gram negative diplococci on culture media. This would rather outmode the "beer test" passage of a sound, or the application of silver nitrate.

Nesbit of Ann Arbor has shown that the action of sulfapyridine in gonorrheal urethritis is systemic by way of body fluids and not locally by way of the urine.

He encountered the peculiar instance of a patient with a gonorrheal infection who had had previously surgical anastomosis of his ureters and bowel for interstitial cystitis.

This patient was promptly and completely cured upon oral sulfapyridine therapy while his urine was diverted into his descending colon.

In recent literature there have been several articles entitled "Urolithiasis Medicamentosa" and it is with regard to this that I would like to make special mention before closing the discussion upon sulfapyridine and to illustrate the point with a case presentation.

A few weeks ago a physician, one of Chicago's most prominent cardiologists, came under our observation in the hospital. Four days before entry he contracted an ordinary upper respiratory infection. The evening prior to entry he had a severe chill and temperature rose to 101°

F, with marked general malaise. Upon admission his chest revealed numerous sibilant and musical rales with no evidence of consolidation. He had been known to have an asthmatic bronchitis of long standing. Chest plate revealed findings compatible with right lower lobe pneumonia which when typed specifically showed type 21 pneumococcus. No serum was given because of history of previous sensitivity. Sulfapyridine therapy was started immediately. Oral administration of 1 gram each hour for four doses was undertaken then patient received 1 gram every four hours for a total 13 grams, approximately 200 grains. Twenty-four hours later the temperature was normal but patient experienced severe pain in the left testicle and was passing grossly bloody urine with clots. Chemotherapy was promptly discontinued and a careful study of the urine was made, in the sediment which was found the typical wedge shaped "broom straw" crystals of acetylated sulfapyridine. Fluids were forced, ample sedation given for the colic caused by the clots and the patient recovered uneventfully.

This brings out a very important point in the course of sulfapyridine therapy. That of precipitation phenomena causing serious traumatic or mechanical effects to the kidney. That crystals of sulfapyridine are precipitated in the kidney tubules and pelvis in certain species of mammals has been shown by numerous observers. Autapol and Robinson were the first to report the appearance of uroliths in monkeys, rats and rabbits following large doses of sulfapyridine taken orally.

These investigations in addition described changes in the kidney secondary to the deposition of sulfapyridine crystals and stones. In the milder cases, there occurred merely a calculous ureteritis and pyelitis causing hematuria. In the more severe, a definite toxic pyelonephritis occurred with nitrogen retention in the blood.

The sulfapyridine stones were found to be non-opaque to the x-ray by pyelographic study and of particular significance was the fact that where not excessive were readily redissolved and washed out. Upon analysis these concretions were found to contain approximately 65 per cent. acetyl-sulfapyridine and 6 to 8 per cent. free sulfapyridine.

Walter Stryker has done some very nice work in revealing the nature of the renal lesion with

sulfapyridine therapy. He has found the acetylated sulfapyridine crystals to take a basophilic stain in the rapid celloidin staining method. Methods other than the rapid celloidin method wash out the precipitated crystals in the process. The crystals were found principally to obstruct Heule's loop and the collecting tubules, and a dilation of the glomerular spaces and convoluted portion were observed as proof that above obstruction one always finds dilatation.

His suggestions for prevention are two fold. Force fluids to keep the urine from overly concentrating after tubular absorption. The urine should be alkalized for it is known that acetylated sulfapyridine is less soluble in acid than in an alkaline medium. The efficacy of this latter technique, as he says, is still to be demonstrated.

Therefore, from the foregoing it seems as necessary to examine daily the urine as well as count the blood of patients receiving sulfapyridine, and if red cells are encountered it should be discontinued promptly.

My discussion of sulfapyridine has been curtailed purposefully for by some it has already been considered outmoded by the discovery this year of the thiazole derivative of sulfanilamide by Fosbinder in this country.

Chemically this drug is known as 2 paraamino benzene sulfanamido thiazole. Its sodium salt has been found to have a definitely less toxic effect than sulfapyridine, whereas it appears up to date to have much greater potentialities. The reasons for this are two fold. First it approaches sulfanilamide in rapidity of absorption and second, its ease of elimination is thought to surpass the parent drug. When first synthesized sulfathiazole was used in three forms, its sodium salt, methyl and phenyl derivatives the latter two were found to practically equal sulfapyridine in acute toxicity and therefore not of superior value. Sulfa methyl thiazole was placed upon the market but a short time when reports of severe peripheral neuritis appeared so frequent as to preclude all possibility of its practicability.

In comparing pharmacological effects of sulfapyridine and sulfathiazole it was noted that bilateral hydronephrosis and hydroureter with hematuria and albuminuria occurred in six out of seven monkeys. Using the same dosage sulfathiazole produced changes in but one out of seven animals. The latter was found to disappear from the blood of rats, mice and monkeys more

rapidly than sulfapyridine. Its distribution in the body fluids, exudates and transudates appears to be similar to that previously noted for sulfanilamide.

Like the original effect upon the streptococcus for sulfanilamide, the pneumococcus for sulfapyridine, sulfathiazole was originally found to be definitely superior in experimental staphylococcus infections in mice. Further work revealed the thiazole derivative to be equally potent against the pneumococcal infections of mice, and the toxicity as mentioned far below that of sulfapyridine. The blood of treated animals contained a larger fraction of the free substance and a smaller amount of the conjugated substance, such as the acetylated derivative which plays havoc with the kidneys in sulfapyridine therapy. In experimental animals with pneumococcal or staphylococcal infection a 1 per cent. concentration of the drug in the diet was found to equal the effect of pyridine and two per cent. found to be far more efficacious.

In reference to the toxicology of sulfathiazole it has been mentioned that there is one great advantage over sulfapyridine. Much less nausea and vomiting occur. Drug fever and rashes have been fairly common, the latter of the papular or nodular type. Ocular symptoms consisting of infection of one or both sclera and conjunctiva preceded by burning or smarting have been reported. A case in which the ocular and cutaneous symptoms occurred coincidentally appeared to be associated with photosensitization. Hematuria and anuria has been known to occur but it is rare.

A group of investigations lead by Flippin reported the first large case series of pneumococcal infections treated with sulfathiazole. The results were extremely favorable in that all the benefits of sulfapyridine were achieved with practically none of the ill effects. The dosages were in a general way similar to Long's amounts with sulfanilamide. The latter author in March in a Journal of the American Medical Association editorial with the caution so characteristic of all his splendid work on chemotherapy says that until further sufficient data are at hand enthusiasms must not outrun common sense, in the administration of the thiazole derivatives.

The literature of the past 6 months I definitely believe has adhered to Doctor Long's dictum. For the splendid results achieved by this newest

addition to chemotherapy have been anything but transient enthusiasms.

Helmholtz at the Mayo Clinic has reported on the activity of sulfathiazole both in vitro and in vivo. He finds a definite bactericidal effect upon the streptococcus fecalis and an almost specific staphylococcus aureus, streptococcus fecalis and E. coli. This with staphylococcus infection cleared up 100 per cent. and in a surprisingly short time on a dosage of 4 grams daily, 15 grains Q. I. T.

Our limited experience in private practice bears out the fact that sulfathiazole is extremely efficacious in the treatment of all the non-specific upper urinary tract infections and especially the staphylococcal types which heretofore have been outstanding in its chronicity and failure of response to all management.

One case bears citing in regard to severe staphylococcus infection that of a 10 year old girl who following an injury developed an epidural abscess with staphylococcus septicemia and pyemia. The patient was given a 1 per cent. intravenous solution of the sodium salt; 50cc. initially then 25 cc. of 8 hour for 2 doses and continued on 2 grams orally every eight hours. By the 8th day the blood culture was negative and the patient went on to complete recovery. A blood level of 6 to 9 mg. per cent. is desirable in most acutely severe cases which however will vary with the individual's absorptive and eliminative process. The majority of pneumonias without pneumococcaemia will respond satisfactorily with a blood level maintained between 4 and 7 mg. per 100 cc.

SUMMARY AND CONCLUSIONS

1. Chemotherapy with sulfanilamide is discussed in general.
2. Contraindications to sulfanilamide therapy stressed.
3. Indications and results with sulfanilamide are cited.
4. The toxicology of sulfanilamide is reviewed.
5. Pneumococcal pneumonia therapy with sulfapyridine is given in detail.
6. Treatment of gonorrheal infections in England and this country with sulfapyridine is reviewed.
7. Urolithiasis medicamentosa its mechanism explained and illustrated with case presentation.

8. Experimental therapeutics of sulfathiazole and its superiority over sulfapyridine in pneumococcic and staphylococcic infection given in detail.
 9. Clinical use of sulfathiazole discussed.
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X-RAY THERAPY IN PNEUMONIA

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During the past few years the treatment of pneumonia has undergone great changes. Medical journals have been filled by excellent dissertations by sincere authors, recounting the excellent results attended by first the use of type specific anti-pneumococcic serum, and later by various chemical agents grouped as sulfanilamide and its derivatives. When the use of type specific serum became common three years ago, it was believed that the millenium in regard to the therapy of pneumococcic pneumonia, had arrived. Undeniably, the results have been excellent and have more than justified the previous optimism. It was generally believed that any new treatment would be purely superfluous, so little attention was paid to the possibilities offered by roentgen therapy in this same field, as voiced by Powell^{1, 2, 3, 4}. Serum therapy, while successful, required careful typing, expensive serum, careful technique, tedious care and incurred the risk of reactions. Furthermore, at that time specific sera were not available for several types of pneumococci, and in many instances no type of pneumococci were found in many cases of typical clinical pneumonia. It is probably an academic question whether a pneumonia, to be rightfully called a pneumonia, must be due to one of the organisms of the pneumococcic family. For our purposes, the term pneumonia is used to refer to any acute pulmonary consolidation based on invasion of various types of bacteria. Because of the difficulties of serum therapy the introduction of chemical therapeutic agents such as sulfanilamide, prontosil, neoprontosil and sulfapyridin was widely heralded and it was successful, particularly when sulfapyridine became the chemical agent of choice. This form of treatment was easily carried out and could be tried on the slightest provocation without the necessity of typing and

fear of anaphylactic reaction. True, many untoward reactions were reported⁵ in medical journals, but in the main the excellent results achieved matched those attained by type specific anti-pneumococcic serum. The latter form of therapy became more adequate with the development of rabbit serum in place of horse serum and because sera for all the known types of pneumococci were provided. In many instances the expensive serum was provided by the state, removing the objection of high cost to the patient.

It seems then that any new form of therapy is unnecessary. Before the introduction of serum and sulfapyridine the mortality rates have been generally reported as 25% and higher. Recent reports concerning the use of the above agents give the mortality rates as between 10 to 17% depending on the combinations used. This has been a very material advance, one that was little expected a few years ago. However, the millenium in pneumonia therapy has not been reached and if a third form of treatment offers a simple, safe result which compares with or is more favorable than those in use, that form of treatment should not be lightly discarded.

Roentgen therapy has been used occasionally in pneumonia for many years although its use was restricted more or less to patients with unresolved pneumonia. From an experimental standpoint, Fried⁶ has indicated that the effect of x-ray on pneumonia is definite and favorable. Several reports including those by Powell, Cohen and Levine⁷, and Scott⁸ concerning the clinical use of roentgen therapy have appeared in medical journals during the last three years and each of these reports have been favorable to the use of x-ray therapy. It may be superfluous to point out that roentgen therapy has been used in several forms of localized bacterial invasion and is generally accepted as effective.

Incidentally, after a number of deaths during the serious epidemic of tracheo-bronchitis this past winter, a small series of young patients were treated with x-ray. The results were sufficiently encouraging to make us believe that the mortality rate may be definitely decreased by this mode of therapy.

It must be admitted that the roentgen ray has been little used in the treatment of pneumonia despite these several favorable reports. Desjardins⁹ has pointed out that the association of

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roentgen therapy with malignancy has been firmly established in the mind of the medical profession. In the treatment of malignancies it has been a necessary practice to use dosage which produced definite skin changes. This has led to the erroneous conclusion that all x-ray therapy must be accompanied by damage to normal tissue in the neighborhood of the lesion. The infinitesimal small doses of roentgen rays used in the therapy of infections have not proven injurious. It has been amply demonstrated that infective lesions are as much affected by small doses (50 to 150 roentgens) as they are by larger doses, which precludes the necessity of injury to normal tissues. The second objection to the use of roentgen ray is the necessity of moving sick patients to the x-ray department for adequate treatment and is a more valid one. This will be entirely overcome by the use of bedside therapy units which are becoming more common. In our own series 88 patients were transported to the roentgen department on carts and treated on carts, with no untoward results. A third objection is the presence of a marked leucopenia. However, with the dosages used and the rarity of leucopenia in cases of pneumonia, this is not a frequent or serious contraindication. Kelly¹⁰,¹¹,¹² has added a possible 4th contra-indication, in that he found that patients saturated with sulphanilamide did not respond well to roentgen therapy. This has not yet been confirmed by others but very little has been done to clarify the answer to this question.

Roentgen therapy has little or no direct effect on the invading organism with the doses commonly used. It has been frequently pointed out that inflammatory lesions accompanied by a large accumulation of invading leucocytes and lymphocytes are most susceptible to x-ray therapy. Pneumonic consolidation, therefore appears to be a lesion, the nature of which readily lends itself to this type of therapy. The mode of action of roentgen rays in infections is not known, but is undoubtedly the same for cellulitis, parotitis, pneumonia, etc. The most accepted theory⁹ is based on early destruction of the infiltrating leucocytes with liberation of antibodies, ferments and other protective substances. It has also been suggested by Motchima¹³ that roentgen therapy stimulates hyperemia and intensifies lymph circulation which in turn brings large

quantities of antibodies from other parts of the organism to the inflammatory focus. Smillie¹⁴ found experimentally that leucocytes are destroyed by irradiation at a rate corresponding closely to the subsidence of inflammatory changes after exposure to a suitable dose of x-rays or radium.

The present series is based on the histories of 286 patients, in whom the diagnosis was made by various means. They include practically all cases seen in a 200 bed hospital over a period of almost three years. They include patients of all ages treated by all possible combinations. The patients were private patients of many individual physicians and the diagnosis and treatment were greatly varied as might be expected under the circumstances. Sometimes the diagnosis was based on history and clinical findings alone, more often these findings were augmented by a roentgenogram, sputum examination, blood culture, etc. The data are definitely incomplete in many instances. Added to these difficulties are the many intangibles which are a part of the pneumonia picture such as the variability of the virulence of the organism, and the frequency of the lower and more fatal types and the presence of atypical pneumonias. The many types of pneumococci, the many other possible causative organisms, the various forms of chemotherapy, horse and rabbit serum, as well as other factors, confuse the entire picture. This confusion is apparent even in those controlled series conducted scientifically for the purpose of comparing the efficacy of serum therapy and chemotherapy.

The various methods of treatments used is the basis of the division of the patients of this report into 8 groups. They could readily be subdivided into many more groups, which undoubtedly would help to clarify many angles of this question, but for practical purposes and for simplification, the following subdivisions are used.

Group A. Patients treated with type specific antipneumococcic serum alone. This group is very small for it did not seem popular to rely on this form of therapy alone. It presupposes the presence of a specific type of pneumococcus and in the early days of serum therapy, serum for certain types of pneumococci was not available.

Group B. Patients treated by sulphanilamide and its derivatives. During the early stages,

sulfanilamide only was available and as prontosil, neoprontosil and finally sulfa-pyridine were available these forms of chemical substance were used. Again for practical purposes, the patients treated by these various chemicals are grouped together, although it is generally believed that sulfa-pyridine is the most effective in pneumonia.

Group C. Patients treated by means of x-ray therapy alone.

Group D. Patients treated by roentgen therapy and some form of chemotherapy. In a few cases, early in the study, x-ray therapy was used because of the reactions of patients to sulfanilamide, making it advisable to stop the administration of the drug.

Group E. Patients treated by serum and roentgen therapy.

Group F. Patients treated by serum and some form of chemotherapy.

Group G. Patients treated by means of all three forms of therapy, roentgen ray, serum and sulfanilamide or one of its derivatives.

Group O. Patients who received none of the methods of therapy under discussion. This group is comprised of many patients who developed pneumonia after surgery, during courses of severe chronic disease, etc. (In a series of this size it is apparent that subdivision into 8 groups makes for small numbers in each division.)

All patients receiving x-ray therapy were treated in the Roentgen department. No treatment was refused when definitely requested by the attending physician, regardless of the condition of the patient. In one instance the treatment was given on the 9th day of hospitalization when the patient had not responded to sulfanilamide and neoprontosil therapy. The patient died the following day. Another patient, an eighty year old man, was brought directly to the roentgen department for a film which revealed a bilateral bronchial pneumonia and marked cardiac enlargement. This patient died within twenty-four hours of admittance. The usual procedure, in regard to x-ray therapy was to have the patient brought directly to the roentgen department on a cart, the roentgenogram of the chest taken without removing the patient from

the cart. When the film revealed the presence of consolidation or a bronchial pneumonia the patient was wheeled directly into the roentgen therapy room and the treatment was given with the patient undisturbed. Particular care was taken to prevent exposure, so clothing was not necessarily removed. Our technique is very similar to that advocated by Powell, although the dose in roentgens was much smaller. We used 4.0 millimeters of aluminum filtration with a voltage of 140 P.K.V., at a distance of 50 centimeters. The roentgens used in this series varied between 75 to 135 per field. In children under twelve years, the dose was usually 75 roentgens, although occasionally slightly more was given. If the temperature remained over a 100° F., a second treatment was given the second day. If no perceptible response was noted following the second roentgen treatment, this type of therapy was abandoned. In a few instances more than two treatments were given but this was done only in those instances where the condition did not respond to other forms of therapy. The second treatment was often given to a field opposite to that of the first treatment. However, the doses were small so this is not actually necessary and if the patient was extremely ill, the exertion of turning patient over on the stomach could be avoided. The so called "favorable syndrome" as described by Powell was frequently noted in this series. Where it was absent the total effect of x-ray therapy was negligible.

Tables 1, 2, and 3 give a very brief summary of the findings and results in 7 of the 8 groups. The eighth group was not itemized because of the large percentage in which the patients were suffering from conditions which preceded and often overshadowed the pneumonia picture. Thirty-nine of the ninety-four patients died. Particular reference should be made to the eight patients treated by serum and chemotherapy (Group F) who died. In at least five instances the prepneumonia condition was such that the addition of a pneumonia seemed certain to tip the scale in favor of death. Another patient was 82 years of age. Among those who recovered, one had a cancer of the breast, another cirrhosis of the liver and a third was an obstetrical case. In small series of this type these factors make statistics practically worthless.

TABLE 1

	GROUP A SERUM THERAPY ALONE	GROUP B CHEMO-THERAPY ALONE	GROUP C ROENTGEN THERAPY ONLY
NUMBER OF CASES	14 (8M-6F)	66 (37M-29F)	48 (21M-27F)
PERCENT FILMED	29%	70%	100%
DAYS ILL BEFORE HOSPITALIZATION OR TREATMENT	AVE. 2.7 DAYS	AVE. 5.25 DAYS	7 DAYS
AGE			
YOUNGEST	9	1	1
OLDEST	67	88	80
AVERAGE	37	31	23
MEAN	37	32	24
FILMED			
LOBAR	4	24	23
BRONCHIAL	0	22	25
TYPES	TYPE I—5 TYPE II—3 TYPE VIII—3 TYPE VII—3	TYPE I—2 STAPH. 5 TYPE III—5 STREP. 4 TYPE IV—2 B. CAT. 1 OTHER TYPES—7	TYPE I — 3 TYPE III — 1 OTHER TYPES — 11 STREP. — 4 STAPH. — 1
TREATMENT	AVE. DOSE 110,000 UNIT 40,000—SMALLEST DOSE 220,000—LARGEST DOSE	SULFANILAMIDE — 29 SULFAPYRIDINE — 26 PRONTOSIL — 8 MORE THAN ONE — 3	AVE. 1 to 2 TREATMENTS LEAST NUMBER — 1 LARGEST NUMBER — 5
AVE. DAYS IN HOSPITAL	9 DAYS	13.5 DAYS	9.5 DAYS
NUMBER DIED AND TYPES	2 (14%)	12 (18%) TYPES 3, 4, 19, STAPH, STREP, B. CAT.	3 (6%) STAPH. — 1 STREP. — 1 N.D. — 1
COMPLICATIONS	SERUM SICKNESS))—1 POLYARTHRITIS)	OTITIS MEDIA — 4 EMPHYEMA — 6 2ND PNEUMONIA — 1 NEPHRITIS — 1 GLYCOSURIA — 1 TOXIC PSYCHOSIS — 1	OTITIS MEDIA — 1 PLEURAL EFFUSION — 1
RECOVERED	12 (85%)	54 (81%)	45 (93%)

The statistics in this series are favorable to roentgen therapy. The four patients who died after having x-ray therapy as part of their treatment are worthy of further consideration. The first patient was one year of age. The sputum examination revealed a form of staphylococcus and x-ray examination of the chest revealed a bronchial pneumonia. No response was noted after roentgen therapy was given. The second case was a male 21, who had been hospitalized two weeks previously for a ruptured appendix and developing peritonitis. Only one treatment was given because of the difficulty of transportation. Sputum examination revealed an organism probably streptococcus. He died three weeks later and at necropsy diffuse peritonitis and multiple abscesses were found in many organs including the lungs. The third patient was a

male 80 years of age, who entered the hospital with a severe cardiorenal disturbance. The x-ray film of the chest showed a cardiac enlargement, some congestion of both lung fields. Sputum was not examined. He died within twenty-four hours. This patient may not have been a true pneumonia since it is difficult to diagnose a bronchial pneumonia superimposed on peribronchial congestion. An autopsy was not done. The fourth patient was a male, 22, who had a type 7 pneumonia. He was treated with sulfanilamide and prontosil, with no results. He became drowsy the ninth day and at the request of the attending physician a single x-ray treatment was given. He died the following day with symptoms of a meningitis.

Thirty-nine of the patients treated by x-ray alone or in combination had a pneumococcal

TABLE 2

GROUP D			GROUP E		GROUP F		GROUP G	
X-RAY & CHEMOTHERAPY			SERUM & X-RAY		CHEMOTHERAPY & SERUM		ALL THREE	
NUMBER OF CASES	2 (15M-14F)		4 (2M-2F)		24 (12M-12F)		7 (5M-2F)	
DAYS ILL BEFORE TREATMENT	4.5 DAYS		2.5 DAYS		3 DAYS		4 DAYS	
AGES								
YOUNGEST	1 YEAR		9 YEARS		1 YEAR		1 YEAR	
OLDEST	76 YEARS		41 YEARS		82 YEARS		32 YEARS	
AVERAGE	23.5 YEARS		26 YEARS		42 YEARS		9 YEARS	
MEAN	11 YEARS		27 YEARS		38 YEARS		2 YEARS	
PER CENT FILMED	100% (29)		100% (4)		50% (12)		100% (7)	
LOBAR	15		3		8		2	
BRONCHIAL	14		1		4		5	
TYPES	TYPE	—4	TYPE I	—1	TYPE I	—3	TYPE I	—1
	TYPE III	—3	TYPE II	—2	TYPE II	—2	TYPE II	—1
	TYPE IV	1	TYPE VIII	—1	TYPE III	—1	TYPE III	—2
	HIGHER TYPES	—5			TYPE IV	—2	OTHER	
	STAPH.	—1			TYPE VII	—7	TYPES	—3
	STREP.	—1			OTHER TYPES	—9		
TREATMENT	SULFANILAMIDE—21 SULFAPYRIDINE— 5 X-RAY AVE. 1.9 TR.		AVE. 100,000 U. X-RAY—1.25 TR.		AVE. SERUM—125,000 U SULFAPYRIDINE —12 SULFANILAMIDE —11		SERUM— 110,000 U SULFAPYRI- DINE—5 X-RAY—1.4 TR.	
AVE. DAYS IN HOSPITAL	13.4		12		12		9	
RECOVERED	28 (96%)		4 (100%)		16 (66 2/3%)		7 (100%)	
COMPLICATIONS	OTITIS MEDIA	—4	HIVES — 2		SURVIVALS INCLUDE		OTITIS MEDIA—1	
	EMPHYEMA	—3			1. CA. OF BREAST			
	PHLEBITIS	—1			2. CIRRHOSIS OF LIVER			
	CARBUNCLE	—1			3. POST DELIVERY			
	MENINGISMUS	—1						
	2ND PNEUMONIA	—1						
	DELAYED CRISIS	—1						
DIED	1 (4%)		0		8 (33 1/3%)		0	
					AMONG DEATHS			
					1. ENDOCARDITIS			
					2. ALCOHOLISM (P.O.APP.)			
					3. HYPERTHYROIDISM			
					4. TB. & FRACTURED HIP			
					5. DIED FIRST DAY			
					6. 7 MOS. AGE			
					7. 82 YEARS OF AGE			

TABLE 3

TOTAL TREATED WITH X-RAY

	NUMBER TREATED	RECOVERED	DIED	%
GROUP C X-RAY ALONE	48	45	3	6+%
GROUP D X-RAY AND CHEMOTHERAPY	29	28	1	3 %
GROUP E X-RAY AND SERUM	4	4	0	
GROUP G ALL 3	7	7	0	
TOTAL	88	84	4	4.8%

pneumonia in which the organism could be typed. Of these thirty-nine patients only one died, a type 7. This number includes 9 type I, 3 type II, 6 type III and 2 of type IV.

Another problem of interest concerns the presence of complications. The lowest percentage of complications occurred consistently in those patients who had serum as all or part of the anti-pneumonia therapy. The highest percentage of complications occurred consistently in those patients treated by some form of chemotherapy. This was most marked in that group in which chemotherapy was supplemented by roentgen therapy. Of the twenty-nine patients only one died but twelve had definite complications such as otitis media, pleural effusion, phlebitis, carbuncles, meningismus, a second pneumonia and in one a relapsed crisis with temperature remaining high over three weeks. This would lend weight to Kelly's assertion that x-ray is not effective in patients saturated with sulfanilamide. However, the death rate in this group is extremely low. In one patient of this group, a man of 75 years, a roentgenogram of the chest revealed a pneumonia, left lower lobe. On examination of the sputum, type III pneumonia was found. Sulfanilamide was given but cyanosis became so marked that this form of therapy was moderated, then abandoned, and x-ray therapy was given on

two separate days. The fever subsided following the second treatment. About one week later, the patient was about to be dismissed when slight dyspnea and elevation of temperature occurred. Roentgen examination of the chest at this time revealed a lobar pneumonia, involving the right upper lobe. This was successfully treated by roentgen therapy.

Several other important factors might be mentioned. Serum doses are given only approximately. In some patients treated by chemical substances, the blood concentration was followed closely, in others it was disregarded. Blood cultures were taken in a fair percentage of cases but were not recorded here although their importance is fully realized. The diagnosis was confirmed by roentgenograms in 140 of the 192 cases treated by one or more of these therapeutic agents. Every patient in which roentgen therapy was used had an x-ray film of the chest substantiating the diagnosis. This is not true of the other groups. Physicians depending principally on serum therapy were least interested in x-ray confirmation of the diagnosis. In more than one instance x-ray films were taken on patients suffering from a moderate fever, cough, occasional bronchial rales and a sputum which was positive for some of the higher types of pneumococci. The roentgen film in several in-

TABLE 4
TOTAL TREATED WITH CHEMOTHERAPY

	NUMBER TREATED	RECOVERED	DIED	%
GROUP B CHEMOTHERAPY ALONE	66	54	12	18%
GROUP D CHEMOTHERAPY & X-RAY	29	28	1	3%
GROUP F CHEMOTHERAPY & SERUM	24	16	8+	33-1/3%
GROUP G ALL THREE	4	4	0	
TOTALS	123	102	21	17%

TABLE 5
TOTAL WITH SERUM

	NUMBER TREATED	RECOVERED	DIED	%
GROUP A SERUM ALONE	14	12	2	14%
GROUP E SERUM AND X-RAY	4	4	0	
GROUP F SERUM & CHEMOTHERAPY	24	16	8	33%
GROUP G ALL THREE	7	7	0	
TOTALS	49	39	10	20%

stances showed no evidence of consolidation or bronchial pneumonia. The presence of a positive sputum does not, in itself, make a diagnosis of pneumonia, particularly when higher types are found, for it is easily conceivable that an upper respiratory tract infection could be caused by one of the pneumococci without involvement of the lung. Positive physical findings are important but become more significant when confirmed by an x-ray study.

CONCLUSIONS

1. Roentgen therapy has a definite value in many acute infections and pneumonia should be included in this group.
2. Many pneumonia patients receiving x-ray therapy reported a definite decrease in discomfort. When this favorable syndrome developed, roentgen therapy was successful.
3. Complications occurred most frequently in that group of patients who received a combination of roentgen therapy and some form of chemotherapy. This would suggest that Kelly's observation deserves further consideration.
4. The dosage in roentgens was smaller than in previous reports on this subject.
5. Statistics of small groups are prone to be unreliable. The favorable results in this series suggests at least the advisability of further reports on this subject.

BIBLIOGRAPHY

1. Powell, E. V. Radiation Therapy of Lobar Pneumonia. *Texas State Medical Journal* 32: 237-240, 1936.
2. Powell, E. V. Roentgen Rays in the Diagnosis and Treatment of Pneumonia. *Texas State Medical Journal*, 33: 427-432, 1937.
3. Powell, E. V. Roentgen Therapy of Lobar Pneumonia. *Journal A. M. A.* 110: 19-22, 1938.
4. Powell, E. V. Treatment of Acute Pneumonia with Roentgen Rays. *Am. Jour. Roent. and Ra. Th.*, 41: 404-419, 1939.
5. Brown, Thornton and Wilson. Clinical Toxicity of Sulfanilamide and Sulfapyridine. *Jour. A. M. A.*, 114: 1605, 1940.
6. Fried, C. Treatment of Experimental Pneumonia by Irradiation. *Strahlentherapie*, 58: 430-488, 1937.
7. Cohen and Levine. Roentgen Treatment of Lobar Pneumonia. *Am. Jour. Roent. and Ra. Th.*, 42: 411-418, 1939.
8. Scott, W. R. X-ray Therapy in the Treatment of Acute Pneumonia. *Radiology*, 33: 331-350, 1939.
9. Desjardins, A. U. The Action of Roentgen Rays or Radium on Inflammatory Processes. *Radiology*, 29: 436-445, 1937.
10. Kelly and Dowell. The Roentgen Treatment of Acute Peritonitis and Other Infections with Mobile X-Ray Apparatus. *Radiology*, 32: 675-692, 1939.
11. Kelly, J. F. Personal Communication.
12. Kelly, J. F. Danger of Sulfanilamide in X-Ray Therapy. *Victor News*, 11: 1-8, 1939.
13. Motchima. Quoted by (7) above.
14. Smillie, W. G. The Prevention of Pneumonia. *New York State Jour. Med.*, 38: 1485-1491, 1938.

DISCUSSION

Dr. E. L. Rypins, Bloomington: I would like to raise the question, in connection with Dr. Decker's last case, whether it was possible that the film was taken before one might expect change. In other words, in positive sputum it often takes six to ten to twelve hours before you will have enough changes in the lung fields to be recognized on a film.

Dr. Harry B. Magee: During the winter of 1938 I spent two and one-half months as roentgenologist to the St. Francis Hospital, awaiting the arrival of their newly appointed roentgenologist. During that period I had the experience of treating fourteen cases of pneumonia with x-ray. No cases had been treated with x-ray in this institution up until that time and none of the cases so treated with x-ray were given pneumonia serum. Three especially bad cases I distinctly remember; one a sister who was very stout had a lobar pneumonia which was treated with x-ray. She had a prompt recovery. Immediately following this she developed a lobar pneumonia on the other side, from which she made a prompt recovery with no complications.

The second case, a woman of middle age with double lobar pneumonia, critically ill, who was in an oxygen tent. She was treated with x-ray. Her temperature started dropping in a few hours and almost immediately she was more comfortable. She made an uneventful recovery without any complications. The third case was one of lobar pneumonia type three. No serum could be procured at that time for this type. He was treated with x-ray and made a prompt recovery without any complications.

Of the fourteen cases treated by this method twelve cases made an uneventful recovery. All cases were treated in their rooms with a portable x-ray. Dosage Factors: 90 K.V. capacity, and 2 a.i. filter, 180,—200 R. per area, average number of treatments three.

Dr. Fred H. Decker, Peoria (closing): All of the measurements given were in air, not on the skin of the patient.

In regard to those treated early, I believe the results were generally more favorable.

In regard to the point brought out by Dr. Rypins, the patient was given the serum early and I think the temperature was normal. She was out of the hospital in three or four days. When I saw the patient clinically the case did not look a great deal like pneumonia, although the doctor was convinced that pneumonia was present.

It seems to me Dr. Kelly is very much sold on the idea that the patients saturated with sulfanilamide and treated with x-ray had more complications. I have had some personal correspondence with him on the subject and he was thoroughly convinced that it

was true. His experience is borne out by the number of complications in our series in those patients treated with sulfanilamide and roentgen therapy. It is possible, Dr. Landau, that the combination of sulfanilamide and x-ray therapy had something to do with the difficulties with the patient you mentioned.

I would like to thank the discussants for their remarks.

CHOLECYSTECTOMY

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CHICAGO

In the newer fields of surgery, for example intrathoracic surgery, our knowledge is in a state of flux and each new idea may materially influence our opinions. In well explored fields, however, such as surgery of the biliary tract, abrupt changes are rare, and our opinions are moulded by the consideration and review of long series of cases and many years of work. Changes in thought are more gradual. It seems to me that meetings such as this one are peculiarly fitted for just this necessary type of careful consideration. Here we are able to pool our experiences and to judge on the basis of a collective survey of the situation. Therefore today I feel that it is perfectly proper to relate to you some of the opinions I have formed during my many years service as surgeon to the Michael Reese Hospital gallbladder group, hoping that these statements may evoke expressions of opinions from other surgeons and that in the end we may all gain by the interchange of ideas.

Technique of Cholecystectomy. Although no two cholecystectomies are ever performed exactly alike it is perfectly logical to describe the main features of the technique as our standard technique, realizing that at any step in the operation minor variations must be adopted to fit the exigencies of the case. In describing the operative technique we use I will endeavor to point out at which stages of the operation we are most likely to depart from the usual method.

Pre-operative Study. Except in an emergency every case coming up for cholecystectomy receives a careful and exhaustive study. Each patient has had a detailed history inquiring especially as to whether or not jaundice has been present. If there has been a history of repeated attacks

of jaundice we know in advance that the common duct will be opened and explored. The fact that no jaundice has been present does not mean that the common duct will not be opened, but the likelihood of so doing is less. If there has been a history of one or more attacks of acute cholecystitis we realize that there is a greater likelihood of adhesions being present and that a greater exposure may be necessary. If the history has been typical of numerous colics, without jaundice, without a history of an acute inflammatory reaction and without symptoms suggestive of involvement of other organs we may reasonably expect a simple localized operation. If there has been a history suggestive of appendicitis the possibility of a simultaneous appendectomy must be considered. We do not perform an appendectomy as a routine procedure with cholecystectomy but only if specially indicated. The same reasoning applies to abdominal wall hernias.

After a careful history has been taken an equally careful physical examination is made. A fat patient requires a longer incision than a thin one. A patient with wide flaring costal margins may be a good candidate for a transverse incision while a patient with a long narrow chest and an acute angular costal margin will require a longitudinal incision. Frequently it will be possible to localize the position of the gallbladder with a great degree of accuracy by the tenderness on palpation. Every patient almost without exception has had one or more Graham Cole cholecystographic examinations. In fact we feel that x-ray examination is as important in the study of a gallbladder as it is in a fracture. A careful checkup of our postoperative results showed us years ago, as similar check ups have convinced others, that the patients with cholelithiasis were usually benefitted by cholecystectomy while patients not having stones were only too frequently not helped by removal of the gallbladder. For this reason we have not advised cholecystectomy in the non-stone cases except in unusual instances. We know of no test as accurate as the Graham-Cole dye test in determining the presence or absence of stones. Contrary to what we at first thought this test is infinitely more reliable than our clinical judgment. We consider a so-called non-filling gallbladder as a diseased gallbladder, only if this finding is repeated on several occasions, using different time intervals and different amounts of dye.

In the great majority of our cases a complete gastrointestinal x-ray study is done. Thus we know in advance that in all probabilities the gastrointestinal tract is normal and although this will not preclude the usual exploration at operation the fact remains that there is less likelihood that any accessory procedure will be indicated.

Lately the only so-called liver function tests that we have been using, except for experimental work, are the icterus index and the cholesterin-cholesterin ester tests. The icterus index determines the icteric factor with much greater accuracy than the naked eye. Although we have determined the cholesterin-cholesterin ester ratio on many cases, I must admit that I would hesitate to evaluate its importance. On the whole clinical judgment remains the one most important factor in evaluating the general condition of the patient. The bleeding and coagulation time are carefully checked, and if found abnormal the patient is treated with vitamin K and bile salts, and blood transfusions, etc. for days before operation.

Our pre-operative procedure is simple. We like to let the patient up and out of bed up to the morning of operation. We usually place her on a low fat, high carbohydrate diet, provided of course that she can tolerate it. All patients are urged to drink plenty of fluids. If vomiting is present fluids are given pre-operatively by intravenous clysis. The abdomen is shaved the day before and the patient is given a soap and water bath the evening before operation.

Choice of Anesthetics: As we look over our results with the view of judging our anesthetic preference, we admit that the anesthetic of choice from the point of view of easy operation and uncomplicated post-operative period is the spinal anesthesia. Lately, however, we have almost entirely discarded it. We have done this solely on the grounds that we are fearful of a drug potentially harmful which must be injected in the full effective dose and which cannot be withdrawn if it proves to be toxic. We never had any untoward results, and I state freely that we may return to it. For the last few years we have been using cyclopropane-oxygen inhalation anesthesia, with a preliminary sedation of morphine and atropine or morphine and scopolamine. I must admit our results have been excellent but there is no question that the relaxation is not as good as with spinal. However we feel safer in the

knowledge that we are employing a drug which is almost immediately metabolized and which we can stop at any moment if necessary. Our anesthetist, Dr. Lennon, has been able to give us a better relaxation than we ever had before with a gas inhalation anesthesia by using intertracheal tubes in certain selected cases.

Incision: We employ one of two incisions — the transverse and the right paramedian. The transverse incision is adaptable to patients with wide flaring costal margins. It is slightly more difficult to make but infinitely easier to sew up. We think that with it there is less danger of postoperative evisceration or hernia. We have been in the habit of letting our gallbladder cases with a transverse incision up and out of bed as soon as they want to, whether it be the third or fourth day, while we have usually kept those patients with a paramedian incision in bed for over a week. For this reason we have preferred the transverse incision in the aged, or in cardiaes or those patients in whom we wanted to "get up and out" as soon as possible. We prefer the paramedian incision for common duct cases. We ourselves can get a better exposure with the paramedian incision, although ardent supporters of the transverse incision claim their experience is the opposite. Whether or not an appendectomy is going to be performed at the same time as the cholecystectomy does not enter into our choice of incision because in either case we make a second button hole McBurney incision unless the cecum can be brought into the wound already made with extreme ease.

Exploration: Unless there is a specific need for speed we routinely perform a manual exploration of the entire peritoneal cavity after the peritoneal cavity is entered.

Aspiration of the Gallbladder: As the first step to the actual removal of the gallbladder we aspirate its fluid contents, using a large bore needle and a 50 cc. Leur's syringe. We have found that it simplifies the operation greatly if the gallbladder is collapsed. The exposure of the cystic duct and the hepatic and common ducts is infinitely easier if there is no distended fundus in the line of vision. The puncture hole made by the needle is closed with a clamp so that no bile need be split. To the question "Is not there danger of contamination by puncturing the gallbladder?" we can positively answer "no." Paranthetically, I might add, that the contents

of the gallbladder are not infectious except perhaps in an extremely rare instance, in the sense that the contents of the bowel or urinary bladder are infectious.

Exposure of the Cystic Duct: The cystic duct is exposed by incising the peritoneum over the hepatico-duodenal fold close to the gallbladder, and spreading the underlying fat and loose areolar tissue. This procedure is facilitated by pulling up on the neck of the gallbladder while the assistant pulls downwards on the duodenum thus putting the fold in a stretch. By opening this region close to the gallbladder, we are not in danger of mistaking the common for the cystic duct should it be attached to the neck of the gallbladder by adhesions. An inflamed lymph gland not infrequently overlies the cystic duct and must be retracted to one side or the other. Occasionally if a large stone becomes impacted in the cystic duct the cystic duct may become so widened that it may simulate the appearance of the neck of the gallbladder. In such a case the common duct again may be mistaken for the cystic duct unless care is taken. There is one sure way of avoiding injury to the common duct and that is to expose clearly both the cystic and common ducts before ligating the cystic duct.

Ligation of the Cystic Duct: There is little to say about this step of the procedure except to call attention to the fact that we never "doubly ligate" — that is ligating at two different levels — any duct or blood vessel. We can think of no better way of jeopardising the healing of such a duct or vessel than by placing a piece of necrotic tissue just distal to our ligature, and that, of course, is exactly what the surgeon does whenever he ties a second ligature a few millimeters distal to the first one. In our opinion the second ligature is an added factor of danger rather than an additional factor of safety and I think the reason why one so often hears a surgeon say "I sleep better if I know there are two ligatures on the stump" is because that surgeon has never cut a section of that stump after so ligating it.

In every gallbladder operation we place a finger in the foramen of Winslow and carefully palpate the common duct from the base of the liver down to the duodenum. We do not delude ourselves that by this method we can detect every common duct stone. Stones in the liver or in the part of the duct which lies within the duodenum

may escape us. We open the common duct only if any one or more of three conditions are present: 1. history of attacks with jaundice; 2. palpation of stone in the common duct; 3. dilated common duct. We do not feel that the finding of a gravel or small stones in the gallbladder or cystic duct is sufficient reason per se for opening the common duct. I think it not at all unlikely that gravel and minute stones in the common duct will pass through the ampulla of Vater as readily as they do through the cystic duct. We feel that the study of our post-operative results corroborates what I have just said.

Our plan of procedure in attacking a common duct stone is as follows. The duct is opened between two silk sutures used as guy ropes and if we can palpate the stone we attempt to milk it out. After the stone is removed the duct is again carefully palpated. If no further stones are felt a soft flexible bougie is passed up towards the liver and then down towards the duodenum and very carefully pushed through the ampulla of Vater and into the duodenum. Great care should be used in this maneuver to avoid two mistakes. The first is the mistake of thinking the tip of the bougie is in the duodenum when in reality it still is in the intramural part of the duct and is pushing the duodenum along with it. If the probe is actually in the duodenum it can be readily pushed against the anterior wall where it will be easily palpated and where it will shove the anterior wall of the duodenum outwards. The second mistake is that of making a false passage. We avoid the second by using great gentleness and never force. Before probing we flush out the common duct with saline solution. This will occasionally float out a stone. As so often happens a common duct stone may lodge in that part of the duct which lies in a groove of the pancreas and on palpation can scarcely be differentiated from an inflammatory reaction of the organ. In such instances we find it advantageous to mobilize the duodenum. This can be easily done by cutting the peritoneum along its greater curvature and dislocating the entire second portion of the duodenum medially. In this way the entire common duct can be visualized. Now if a probe is passed the duct wall can be palpated against the probe and a stone more readily palpated. A stone lodged in the intrapancreatic portion of the duct — and often the inflamed pancreas completely overlaps the duct — is in

a dangerous position, because in order to get at it, inflamed pancreas must be incised. It is in this type of case that we frequently have post-operative complications. Therefore it is in this type of case, especially in an aged or debilitated patient that we not infrequently leave the stone in situ and reestablish the bile flow into the intestine by means of a cholecyst gastrostomy or duodenostomy or a choledochoduodenostomy. We perform the cholecyst-gastrostomy by means of our modification of the Tate Mason operation. Stones impacted in the ampulla of Vater must often be removed transduodenally, a not difficult procedure especially if the duodenum has been mobilized, but often extremely difficult if the duodenum lies fixed in its normal position.

We do not believe in so-called stretching the ampulla of Vater. As far as we know, whenever a sphincter is "dilated" it is apt to be torn and a tear means scar tissue and scar tissue means contraction. It is true that an esophagus, or a rectal stricture can be dilated but as you all know the increased diameter is maintained only because repeated future dilatations or stretchings are possible. This is not possible in the case of the common duct. We are certain that the best way of avoiding future contractions of the common duct is to use extreme care and gentleness.

We are afraid that this is a point only too frequently overlooked.

Ligation of Cystic Artery: We make no particular effort to hunt for the cystic artery but ligate it more or less "as we find it." That is if it happens to be in juxta position with the cystic duct we will ligate it with the duct. Otherwise we watch for it as we dissect the gallbladder from the liver bed and clamp it as we run across it. By using the technique of blunt scissors dissection, one is not apt to cut it. Even if it should happen to cut accidentally it can easily be caught with a snap if the line of dissection of the gallbladder is fairly high up on the sides of the gallbladder itself.

Suture of the Liver Bed: We do not suture over the denuded gallbladder bed except to stop bleeding. The gallbladder bed as a rule quite naturally falls together.

Closure Without Drainage: We close every simple cholecystectomy without drainage unless there is a definite contraindication to do so. The contraindications are, the opening of an abscess,

open exploration of the common duct, or the rare case in which for some reason or other we have left portions of the gallbladder wall or other infected tissue in situ. We first saw closing without drainage by Dr. Richter of Chicago, and were convinced of the practicability of so doing. In the last six years our procedure has been to close without drainage except in exceptional circumstances. We have never regretted discarding drainage. Within this time we have seen several cases of so-called bile peritonitis, intraperitoneal bile accumulation would be a better name, in consultation, we have had one of our own. All these cases, except our own were drained, and in at least four of these cases no large quantities of bile escaped through the drainage tube. In all of these instances the omentum or the viscera completely walled off the drain and the bile accumulated in spite of drainage. It is perfectly true that as a rule when a drain is used, bile drains from the wound in smaller or larger quantities for several days. "What happens to this bile," I have frequently been asked, "when you do not drain." I cannot answer this but I think that the reason bile drains from the drainage tubes is that these tubes acting as foreign bodies, as they of course are, interfere with the proper healing of the liver bed or of the cystic duct. I think that when no drain is used that probably no or only very little bile escapes into the peritoneal cavity. However be that as it may the postoperative course has been infinitely smoother since we stopped draining.

Most cases of real intraperitoneal bile accumulation are probably due to injury of the common or hepatic duct, or tearing of the cystic duct below the site of ligation and not from so-called accessory ducts or liver bed oozing. We drain our common duct with the good old fashioned T tube. We like most others have at some period or other discarded it for some more modern method, only to come back to it again.

Closure: I have little to add regarding closure except to say that we have practically given up the use of tension sutures. We did this after Dr. Lichtenstein and I had made a thorough study of evisceration following laparotomy at Michael Reese Hospital, and found that in a number of cases the evisceration had actually occurred between tension sutures and that in most cases of evisceration tension sutures had

been used. In other words tension sutures do not prevent evisceration. If we do use tension sutures, we prefer the button type such as is used at Presbyterian Hospital, and so frequently described by Bevan.

After Treatment: We make very little distention in our after treatment of a gallbladder case from other laparotomies. The patient is allowed to lie in bed in the most comfortable position. This very frequently means slight elevation of the back rest and slight flexion of the thighs and knees. If the patient is not nauseated and can take fluids by mouth we see no need of intravenous therapy. We preserve the patient's water balance by giving plenty of fluids by mouth if tolerated or intravenously if not and above all else by covering the patient lightly instead of smothering her with blankets. We can see little logic in the practice formerly so widely used, of making every effort to get in a few quarts of fluid while gallons are being sweated out. We do try to maintain a fairly large carbohydrate intake on the theoretical grounds of protecting the liver. Patients who are losing bile through a biliary tract drainage always receive some form of bile by mouth.

This in brief is the procedure for cholecystectomy as I use it in my private practice and as we use it in the Gallbladder Group.

SUMMARY

We have reported to you in brief our procedure as we have developed it over the years for cholecystectomy. We have told you that we think the x-ray, that is the Graham Cole test, is of extreme importance in gallbladder cases, because we consider the presence of stones as the major indicator for operation. We also reported that we feel clinical judgment as good or better in evaluating the patient's general condition than the so-called liver function tests now at our command. We have given you the reason why we use cycloprane or other gas inhalation anesthesia but also why we would like to use spinal. We have two types of incisions to choose from — the right paramedian and the transverse. We aspirate the bile contained in the gallbladder as our first step to the actual cholecystectomy because a distended neck of the gallbladder obstructs our view of the ducts. We do not feel that the mere fact that the gall bladder contains sand and small stones is an indication to open the common duct, but

that we open the common duct only if one or more of three distinct indications are present. These we enumerated and discussed. We almost invariably visualize the common duct before ligating the cystic duct. We sew up the gallbladder bed only if it is bleeding, and finally that we close our incision in the great majority of cases without drainage.

DISCUSSION

Dr. Geza de Takats, Chicago: I believe you will agree that Dr. Bettman has given a very sane, conservative and concise account of the present status of cholecystectomy, particularly as he uses it at Michael Reese Hospital. It is very difficult to discuss such a paper because fundamentally you cannot help but agree with everything that he said. I feel that it is my duty to bring up some points which are now open to controversy and which may produce some discussion from the floor.

One point that Dr. Bettman made, and one that was stressed by the late Dr. Judd, that the more pronounced the symptoms the better the results, the vaguer the symptoms the poorer the results. That holds particularly in cases of cholelithiasis.

I should like to ask Dr. Bettman to say something about his present attitude of doing cholecystectomy in acute cholecystitis. Some men feel that the gallbladder should be removed in every acute case. Other men feel that if the patient does not improve after the third or fourth day it is necessary to go in and remove the gallbladder.

I think that Dr. Bettman said about the use of spinal anesthesia certainly coincides with our feeling. I have been using spinal in the extremities and lower abdomen, but I have always felt that spinal anesthesia in the upper abdomen is going a little too far. Aside from that, the traction on the cystic duct, the stomach and mesentery produces nausea so often, and you do not abolish that with spinal. We have used local infiltration of the abdominal wall together with the peritoneum, and we have used ethylene. When you have an anesthetic department like in Michael Reese Hospital and at the Research Hospital, you can get perfect relaxation with whatever anesthetic you use.

The transverse incision has many advantages. I think all of you who have used the transverse incision like to use it. It not only gives better exposure but does not cut down the ventilation as much after operation. We are now in the process of making some statistics on the question of postoperative ventilation following different incisions. I feel that the transverse incision is far better even from the standpoint of diminution of postoperative complications. It is true that in order to get to the common duct, particularly in a narrow chested individual with asthenic habitus, it is necessary to make the incision up to the ensiform cartilage. I have used the type of incision employed by Kocher, starting at the ensiform cartilage and making it transverse. This is a com-

promise between a longitudinal and transverse incision but it works very well.

Dr. Bettman has started on the controversial subject, to drain or not to drain after cholecystectomy. I feel that the usual methods of drainage are highly unsatisfactory. I was taught to pack the gallbladder bed with iodoform gauze, a perfectly terrible procedure in the light of our present knowledge. That was real drainage. One Penrose drain was inserted when there was some oozing from the liver. I do not think that our present so-called drainage of cholecystectomy cases accomplishes much and may invite infection.

Dilating the ampulla of Vater is a dangerous procedure. I did it about fifteen years ago and it was followed by an acute pancreatitis. This reminds me of pancreatic involvement in recurrent cases. If an acute pancreatitis follows cholecystectomy it is always fatal. The percentage of pancreatic sclerosis in gallbladder infections is very high. Sometimes you feel a hard pancreas. I wonder if Dr. Bettman would like to comment on the pancreatic findings during removal of the gallbladder.

In regard to the use of T-tube or catheter, on the service of Dr. S. W. McArthur they have combined the use of the T-tube and catheter.

I believe the most important point in Dr. Bettman's paper is his warning against operating on a large number of non-calculous cholecystitis cases which do far better with medical management.

Dr. John A. Wolfer (Chicago): Naturally I have been much interested to hear what Doctor Bettman has to say. Unfortunately time does not permit a discussion of this problem from a number of angles, however there are two or three points that I should like to stress. One thing is the preoperative preparation of the patient for cholecystectomy. Some of you from this part of the state may know how I feel about it and shall I restate it plainly: taking a patient with gallbladder trouble into the hospital one day and subjecting him to a cholecystectomy the next morning is wrong. We all know that frequently liver changes have taken place, changes that we may be totally unaware of. The additional burden placed upon the damaged liver incident to a surgical procedure such as cholecystectomy may be sufficient to precipitate a fatal issue after what is considered an ideal cholecystectomy. We have been studying a series of biochemical reactions directed toward evaluating liver function as it may be found in biliary tract disease. Among these are cholesterol partition. It is believed that the liver esterifies cholesterol and under normal conditions there should appear no more than 35 per cent. free of unesterified cholesterol in the blood, hence in the event of a percentage of free cholesterol higher than this, liver damage can be anticipated. This theory was first suggested by Epstein and has been substantiated by us as well as by Pickhardt and others. We have also estimated the amount of serum phosphatase in the blood since it

is believed that in the presence of liver damage, the blood values will rise above the normal of 4 Bodansky units in the adult. In our opinion this test is a more accurate index of liver function than cholesterol partition.

We have been taught to protect the liver when it is damaged by giving large amounts of sugar and other carbohydrates but it must not be forgotten that an adequate protein intake is just as essential to its welfare. Other factors enter into the problem of liver protection. Advantage should be taken of all since a fatal outcome following a technically perfect cholecystectomy is a tragedy.

There is one point in the technique that I should like to mention. When a pair of forceps is applied to the gallbladder for traction is doing a cholecystectomy, the traction is transferred to the common duct which may be sharply angulated thereby. Unless a careful dissection and isolation of the cystic duct is made, the ligature may be placed about the angulated portion of the common duct and when the ligature cuts through in six to eight days a biliary fistula ensues.

I was interested to hear that Doctor Bettman does not drain following cholecystectomy. We drain only the exceptional case believing that by omitting drainage, we relieve the patient of a definite hazard and facilitate a smoother convalescence.

The incidence of evisceration has also been alluded to. During the past several years we have been conducting studies on vitamin C metabolism on the basis that vitamin C deficiency contributes to failure in wound healing. In every case of evisceration in which blood C determinations were made, a marked deficiency was noted. Sufficient data have been obtained to warrant the conclusion that cevitamic acid has a definite effect on wound healing. Attention should be called to the fact that most patients suffering from chronic cholecystitis and peptic ulcer markedly restrict their diets due to indigestion, therefore they avoid the foods rich in vitamin C. We have been amazed to find patients in excellent state of nutrition with a blood C level of 0.3 milligrams per cent. or less. This is definitely in the scurvy level. We are very enthusiastic on this subject and all doubtful cases are given large amounts of vitamin C preoperatively as well as postoperatively. To date we have had no disruption of a wound nor a hernia.

I wish to thank Doctor Bettman for his contribution which is extremely illuminating and important. I have never used the transverse incision. Possibly in the course of time with Doctor Bettman's powers of persuasion I may yet use it.

Dr. Frederick Christopher, Evanston: I would like to ask Dr. Bettman what is his stand on doing cholecystectomy in cases of so-called silent stones; where there have been no symptoms suggestive of stones but the stones were found on x-ray examination.

Dr. Ralph B. Bettman, Chicago (closing): I am pleased to hear that Dr. de Takats has agreed with

me. He asked me my feeling about acute cholecystitis and incidentally answered the question. I, too, agree that it is better to allow an attack to subside and then perform a cholecystectomy in the interval. However, I wish to take this opportunity to call your attention to the fact that all of us have seen cases of acute cholecystitis that have perforated into the general peritoneal cavity, or into a walled off space. Either of these is distinctly unpleasant for the patient. Our method of treatment has been to wait for a longer or shorter time depending entirely upon the condition of the patient, to allow the acute attack to subside spontaneously, but as soon as the indications seems to suggest that this may not occur to drain or remove the gallbladder. Drainage of the gallbladder can usually be accomplished with local anesthesia. Almost immediate relief is obtained and from my point of view it is a much safer procedure to await the subsidence of the acute attack with a drainage tube in the gallbladder than without drainage. In a smaller number of cases we have removed the acutely inflamed gallbladder and the patients have made uncomplicated convalescences. While I agree entirely with those who say that an acutely inflamed gallbladder can be safely removed, I think that it is a little far fetched to compare the treatment for acute gallbladder with that of an acute appendix.

I wish to add my approval to what has been said about the T-tube for common duct drainage. I have on occasions placed one arm of the T-tube through the lower section of the common duct into the duodenum, thus combining T-tube drainage with the famous McArthur technic for internal drainage.

I think few people have contributed more to our knowledge of wound healing than has Dr. Wolfer in his excellent report on cevitamic acid. We make a vigorous effort to preserve the cevitamic acid level in our patients by means of the pre- and postoperative diets and injections of cevitamic acid if necessary.

One point I want to be sure and emphasize. I agree entirely with Dr. Wolfer that it is wrong as a rule to take a gallbladder patient into the hospital and operate the next morning. I hope I did not give the impression that this is the way we carried on. All our patients are meticulously studied and carefully prepared for operation, a procedure which lasts from a few days to many days or weeks. But I wish to make the further point that these patients should be kept ambulatory as much as possible.

We perform the cholesterol-cholesterol-ester ratio-test as a routine but so far this test has acted only as a corroborator of clinical judgment. I might add parenthetically that liver function tests as a whole have not helped us in our clinical evaluation of the patient's condition in the way that the Graham-Cole dye test has helped us in the diagnosis.

Dr. Christopher asked about the gallbladder with stones and without definite gallbladder symptoms, as far as postoperative results are concerned. I can answer this best by stating that if we check our postoperative results we will find that those patients who

had gallstones and typical symptoms of gallbladder colics will have about 90 per cent. of cures from cholecystectomy, that those patients who have no stones will have such a small percentage of cures that we perform cholecystectomy in the absence of stones only as an exception. Those patients who have vague symptoms but in whom nothing else can be found to explain these symptoms except the gallstones have shown a greater percentage of cures than those without stones but a lesser percentage than those with stones and with typical symptoms. In other words, in many cases the preoperative diagnosis had been correct, namely, that the stones found on routine examination were the cause of the trouble.

CESAREAN SECTION A STUDY OF 340 CASES W. C. DANFORTH, M. D.

AND

E. S. BURGE, M. D.

From the Department of Obstetrics and Gynecology
of the Evanston Hospital

EVANSTON, ILL.

The present report records the results of a study of the cases delivered by Cesarean section in the Evanston Hospital during a period of ten years. It covers the work of the years 1929-1938 inclusive. During that time there were 8369 labors of which 340 were managed by abdominal delivery, an incidence of 4.05%. This hospital is one of the affiliated institutions of Northwestern University and all of its staff are members of the faculty. It seems of interest to study the results obtained by a group of trained men. Of the cases reported here 82.4% were cared for by members of the staff of the department of Obstetrics and Gynecology of the hospital. A moderate number of practitioners have courtesy privileges, but, of the total work of the department roughly 80% is done by the staff. Those who have courtesy privileges are not expected to do major obstetric surgery but among them are two men who, during the period of time covered by this report, had teaching positions in the department of Obstetrics and Gynecology of another University and they were not held to the usual restriction. Most of the non-staff Cesareans were done by them.

There can be no question as to the great value of abdominal delivery in cases in which it is clearly indicated. It is true, and this fact has been commented upon and criticized by a number of writers in recent years, that Cesarean section is done in many places far too frequently. When done skillfully, and when the conditions for its

safe performance are observed, the mortality should be low. Many of the deaths which follow Cesarean section are due to the employment of the operation after a long labor during which many examinations have been made or perhaps other operations of delivery have been attempted. Judgment as to the conditions under which the operation may be done is of greater importance than the technic of the operation in its influence upon the mortality rate. The enormous variation in the danger of elective operation and operation done after long labor and various degrees of interference was brought out clearly years ago by Holland. His paper discusses the results of the old classical section but the same holds true, although to a lesser degree, of the low cervical section.

The cases in this report were all done by the low cervical technic. This we adopted before the time covered by this report as our routine procedure and no longer make use of the classical section except in rare cases in which previous operation has made it impossible to enter the lower segment because of adhesions. This did not occur once in this series.

The incidence of Cesarean during the time covered by this report is 4.05%. It is evident that abdominal delivery is not utilized for the solution of all problems but we desire, should another report be made at a later date, that we have an incidence a little less. Our incidence is influenced by two factors, first, the number of repeat operations. Our policy, until quite recently, has been to regard any woman who had had a section as a proper candidate for another because of the possibility of trouble in the scar of the former section. The experience of some of our friends in clinics in other cities has caused us to think that we may have been a little too conservative and that some, at least, of the women who have had sections may be allowed to go into labor. During the past two years a number of labors have been conducted in women who had had previous sections. These have in every case delivered safely. We shall continue this, selecting the cases rather carefully, and believe we may decrease the number of abdominal deliveries somewhat. A multipara who undergoes section because of placenta praevia, for example, if the next labor appears likely to be normal, may be allowed to go into labor. In women in whom the first pregnancy was terminated by section

and who therefore have not had any dilatation of the birth canal, more caution should be observed. We have not yet included in our list of deliveries per vias naturales any case in which a section had been done in the first labor.

The second reason for the incidence of section is found in the fact that our departmental staff is made up exclusively of teachers in the Medical School of our own University. A staff of specialists, particularly the older members of it, tends to draw a larger number of cases in which abnormality is known or feared to exist. This brings a larger number of women in whose cases the operation is legitimately indicated. With a rate of abdominal delivery no larger than we have stated, it seems evident that rational indications have been rather well adhered to. Some of the reasons which are occasionally given for selection of Cesarean section seem unwise and unnecessary. The elderly primipara requires section in only a small part of the cases. It is true that, should there seem to be a likelihood of a complicated labor in a woman who has waited for many years for a baby, a section may be done with somewhat less urgent indication than in the case of a younger woman. A study carried out in our service some time ago by Galloway in which the labors in 237 cases of primiparae over 35 years of age were analysed showed surprisingly little variation from what we are accustomed to see in other women. In these older primiparas Cesarean Section was done in 17.3% of the cases of women from 35 to 40 years and in 29.4% of the women over 40 years. In the great majority of the cases it was unnecessary.

We do not treat all placenta praevias by abdominal delivery although some of them are managed in that way.

There were 97 cases in which Cesarean section was done because of a previous section. This number comprises 28.5% of the cases of Cesarean section. We have not noted any difference in the morbidity of repeat operations as compared with those done for the first time. In 3 cases three sections were done on the same patient. We feel that three is enough but cannot criticize the doing of a larger number when sterilization is impossible. If the recovery from the first operation is smooth the second may usually be done as easily as the first as adhesions are not sufficient to impede the operator.

Disproportion accounted for 77 cases, of which 53 were done after a test of labor and 24 without a test. In cases in which there is a definite over-riding of the head, or in which impression of the head into the pelvis is impossible, section may be done without allowing the patient to go into labor. In all others a test of labor is made use of. We have not found that a test of labor, if the patient is managed with scrupulous asepsis, compromises the result at all and do not hesitate to operate after many hours of labor. In such cases vaginal examination is restricted to one, done under the most careful aseptic precautions. Other examinations are made rectally and care is taken that the number of these is not excessive. If the labor has lasted for some time, and especially if the membranes have been ruptured prior to operation, 30 c.c. of 4% solution of mercurochrome in water is injected into the vagina. One of the chief advantages of the low cervical technic is that it permits a test of labor to be made without excluding the possibility of section should it be found necessary. The possibility of section after labor has been in progress depends entirely upon the maintenance of surgical cleanliness and the low cervical operation is not adapted to use in cases in which infection is actually or potentially present.

Fifty women were operated upon because of toxemia. In a patient whose toxemia is rapidly increasing, particularly if she is a primipara with a closed and uneffaced cervix, delivery by abdominal section is sometimes the safest and wisest course. Section is not used as the routine method of management in toxemia. In the severer cases of toxemia, if section is done, local anesthesia is employed.

In fourteen cases some form of heart disease was the cause for abdominal delivery, making 4.0% of the total number of cases of section. We have every year a number of cases of cardiac disease and find that in but few is abdominal delivery needed. In most cases of heart disease it is wiser to deliver through the natural channel. There is, in many places, too great a readiness to decide upon section when heart trouble is found. It should never be forgotten that every woman who has a laparotomy has also to pass through a convalescence and that this may tax her heart more than a judiciously conducted labor. This has also been the experience of other clinics and we believe that section should not be

a frequent form of delivery in heart disease.

Abdominal delivery was done in 26 cases of breech presentation. Our incidence of breech has been 3.4%, which in the number of labors conducted during the time covered by this report would give 284 cases. As abdominal delivery was selected in less than 10% of these it will be seen that a breech position is not regarded as a frequent indication. In the cases delivered by section there has been an apparent disproportion, usually in a primipara. In cases in which the breech was found in a woman who also has a placenta previa or other sufficient indication for operation, the breech is merely an incidental finding.

In a study of 285 cases of breech presentation which was made in our service in 1937, the mortality of infants delivered at eight months or more of gestation was 5.85%. As this is less than the mortality in the series of abdominal deliveries which are here reported, it seems wise to restrict the use of Cesarean section in breech positions to those cases in which there is a definite disproportion or in which some other indication makes the choice of abdominal delivery necessary.

Abruptio placentae was the occasion for operation in 9 cases. All women who present the signs of abruptio are not treated by abdominal section. The operation is chosen in those in which it seems the safest way of terminating the pregnancy.

There were nine elderly primiparae whose pregnancies were terminated by abdominal delivery. Three of these had a test of labor. We do not believe that all women who have their first babies at an age later than the average should have Cesarean section. In a series of 237 cases, involving women of 35 or over, studied in our service by Galloway, Cesarean section was done in 17.3% of the patients from 35 to 39 years old and in 29.4% of those over 40. The primipara of 40 or more may not have another chance for a baby and one may be more liberal in making use of abdominal delivery than in younger women. Our experience, in common with that of other clinics, is that the danger of labor in the older primiparae is over rated. Many of them have perfectly normal labors and the younger women may sometimes have difficult labors.

In six cases abdominal delivery was done upon

women who, in a previous labor, had sustained a third degree laceration of the perineum. One of these had had two operations before she had regained control of her bowel. It is more difficult to obtain a satisfactory result if a complete injury of the perineum occurs a second time than it is the first. A perineum which has been extensively repaired is not as elastic as an uninjured one but all deeply injured and repaired pelvic floors do not necessitate later Cesarean section.

In two cases section was required to deliver women who had undergone cervical plastic operations. There had evidently been some infection during the healing with the production of rigid scar tissue, for dilatation did not occur after many hours of labor. This is not the usual or even a frequent sequel of cervical plastic procedures upon child-bearing women but we believe the danger to be a real enough one to cause us to avoid such operations unless there is an urgent need for them, and in such cases to take care that the cervical operation is no more extensive than it need be.

Tuberculosis was the indication in two cases. In one of these the patient, a woman of thirty-six years, had had one of her lungs collapsed for four years and had been under the care of an acknowledged expert in the management of tuberculosis. She was intensely anxious for a baby and her physician felt that the tuberculous process was sufficiently under control that it might be risked. He did not wish her to undergo the strain of normal delivery for fear of the effect which effort might have upon the diseased lung. The other was a woman hopelessly ill with advanced tuberculosis who was delivered by abdominal section under local anesthesia because she did not seem able to undergo the strain of even an easy labor. She died a few weeks later.

Two sections were done because of previous fracture of the pelvis. In one of these there was marked deformity which was sufficient to obstruct labor and the other was a young woman who sustained a multiple fracture of the pelvis at the beginning of the eighth month. She went to term and, as the child was large, it seemed wiser to relieve the recently healed pelvis from the strain of a labor which might possibly have terminated in an operative delivery.

One section was done for previous poliomyelitis and one for retinitis pigmentosa. We have

seen but this one case of retinitis pigmentosa. The able ophthalmologist who saw this patient in consultation emphasized the danger of the disease to the mother and also the fact that it is very likely to appear in the children of a woman who has it. For that reason, he felt that no further pregnancies should occur and sterilization was done.

In this series there were three maternal deaths, an incidence of 0.88%. One of these women died of post-partum hemorrhage and another of adynamic ileus. Autopsy in this case showed no mechanical obstruction nor any peritonitis which might explain the ileus. In 67% of the cases there was no material morbidity. In the remainder the morbidity lasted on the average 1.1 days. Ninety-one per cent. of the patients spent 15 days or less in the hospital. Fetal death occurred in 33 cases, or 9.7%. It should not be forgotten that Cesarean section is not absolutely safe for the infant and that there is an inescapable fetal mortality.

Cesarean section occupies a position of great importance in modern obstetrics. Its tremendous value as one of our operative resources should not, however, cause us to overlook the fact that its safe employment demands the careful observance of certain fundamental conditions. While the low cervical section is definitely safer than the older classical operation it too must be employed within certain well understood restrictions. Cesarean section done after the membranes have been long ruptured, and particularly after repeated examination, is less safe than when the operation is done before labor as an elective operation or early in labor. The greatest risk is assumed when the operation is done after an attempt at delivery from below. We have made use of a test of labor in many cases, but whenever this is done, examinations are made rectally and these are restricted to the fewest possible number. If needed, one vaginal examination is permitted, if sufficient information cannot be otherwise obtained, and this is followed by the instillation of 30 c.c. of 4% watery solution of mercurchrome. Much of the unnecessarily high mortality in this country comes from the employment of abdominal delivery after long labors, with ruptured membranes and after attempts at delivery by other methods. A clear comprehension of the contra-indications as well as the indications of the operation, is neces-

sary for its safe employment. The very satisfactory mortality figures from well known clinics encourage some physicians to make use of abdominal delivery when they do not clearly understand the difference in the danger of an operation done under proper conditions and one done after the time for its safe employment has passed.

Conclusions. 1. If the indications for the operation are carefully observed, only a small minority of the labors in any institution need be terminated by abdominal delivery.

2. It should be clearly understood that Cesarean section done after many examinations, or after attempts at delivery from below, are more dangerous than elective operations or those done after a test of labor in which the surgical cleanliness of the birth canal is carefully preserved.

3. In the hands of a group of well trained men, and if the indications and contra-indications are carefully observed, a very satisfactory mortality rate may be obtained.

RESULTS OF SURGICAL TREATMENT OF TUBERCULOSIS OF JOINTS

CLAUDE N. LAMBERT, M. D.

AND

LEO FREDERICK MILLER, M. D.

CHICAGO

This is a report of the cases of tuberculosis of joints surgically treated by operative fusion or resection at the Illinois Surgical Institute for Children, University of Illinois, over the period from June 1932 to June 1938.

Prior to 1932 beds were not available for a large number of cases, and most of the patients were treated conservatively, by casts, and braces, as out patients. The Illinois Surgical Institute for Children is designated for indigent patients of the State of Illinois, and in this summary most of the cases are from "down-state" where very little has been done in the way of early diagnosis, or medical and surgical management, so that most of these have been seen long after the disease had its inception. Thus the roentgen findings revealed pathology varying from subchondral atrophy to complete destruction, and clinically these patients showed marked de-

formities, abscess formation, and in general were poor operative risks.

The series consists of forty-one cases, in which forty-eight operative procedures were done, divided as follows:

Cases	Fusions	Resection
Hip	8	9 (2 refusions)
Spine	17	19 (2 refusions)
Knee	10	13 (2 refusions)
Shoulder	3	3
Sacro-Iliac	1	
Calcaneous	1	1 Calcaneectomy
Astragalus	1	1 Astragalectomy
Total	41	44
		3

With the exception of two spines, all of the above cases have been under observation post-operatively at least two years, the average length of time being three to five years.

It is not within the scope of this paper to mention all cases of tuberculosis of bones and joints seen at the Illinois Surgical Institute for Children during the six-year period, because many were continued on conservative treatment, and others had surgical procedures such as biopsy, drainage of abscesses, subtrochanteric osteotomies to correct deformities in an already fused joint, etc. Those cases listed have all been proved tuberculosis by histological and bacteriological examination and guinea pig inoculation, and positive mantoux, except the spines, which all had positive mantoux and roentgen findings. In many instances where histological and guinea pig inoculations were questionable, the cases have been discarded from this series.

As mentioned above, these patients either had their disease for a long period without any treatment, or had been carried along on conservative measures before entering the Illinois Surgical Institute for Children.

Average length of time of Conservative Treatment or Symptoms	
Spine — Symptoms	4.73 years.
Casts	4.70 years.
Frame	1.18 years.
Hips — Casts	1.5 years.
Traction or frame	0.5 years.
Symptoms	3.34 years.
Knee — Symptoms	5.25 years.
Shoulder — Symptoms	3.8 years.
Immediate fusion	after entering the clinic.
Calcaneous — Symptoms	0.5 years.
Astragalus — Symptoms	3.0 years.
Sacro-iliac — Symptoms	16.0 years.

Report from the Illinois Surgical Institute for Children, University of Illinois.

Services of Henry Bascom Thomas, M. D., Director, of the Institute, and Professor of Orthopedic Surgery.

In view of the above long duration of symptoms, the statistics here presented will not be comparable to those found in places where early diag-

nosis and immediate surgical treatment is the procedure.

In the histories an attempt was made to ascertain contacts with known positive pulmonary tuberculosis, but our statistics showed only nine gave a history of positive contact, but from further investigations by social service workers, many more positive contacts were found. Those with knee joint tuberculosis had associated pathological changes, one in a shoulder, and one in a finger, while two had had a tuberculosis of the spine previously; one of these had an autofusion, and one a surgical fusion. One patient had a bilateral hip involvement, and the patient who had an astragalectomy had had a hip fusion ten years previously.

An observation is in the lung findings — of this series of forty-one cases, only two had positive lung findings in the parenchyma of the lung on roentgen examination, and of these two only one was suggestive. Most of the cases showed a definite peribronchial infiltration.

SPINE. In the series of spine tuberculosis, the seventeen cases were not surgically fused until there was roentgenological evidence of healing as revealed by new bone formation, beginning recalcification, increased density, and clinically a definite improvement in the general physical condition. If the cases had been treated conservatively by hyperextension on a Bradford frame for a long time, they were casted and allowed up and around for at least one month. If they showed no flare-up of symptoms — including increased temperature, loss of weight, etc. — they were then considered ready for fusion. One death in this series occurred when we deviated from this rule and fused her early. She was taken directly from her frame to surgery, and then died immediately postoperatively. One other death occurred four months postoperatively from a tuberculous meningitis.

Preoperatively all cases have plaster of paris shells made, so that immediately postoperatively the patients are put into their previously prepared shell, thus cutting down the time of anesthesia and better fitting plaster casts are obtained. All cases having lesions from D-7 or above have head pieces included in the casts. Lesions from D-7 to L-2 have full body casts, well moulded into the sternoclavicular notch above and the symphysis below. Lesions below

L-2 have a full body and spica cast, extending down one leg to the knee.

All cases have been fused following the technic of Hibbs with one exception, this one having a combination Hibbs-Albee. Two cases were refused for pseudarthrosis, and the average number of vertebrae fused was 7.2. These cases were casted for approximately one year, and then Taylor spine braces supplied for gradual release.

END-RESULTS: The average length of time since fusion was 2.5 years. Fifteen cases had excellent results, and there were two deaths as described above.

HIP. There were eight patients with tuberculosis of the hip, one of whom had a bilateral involvement. In these eight cases eleven operative procedures were performed, divided as follows:

Intra- and extra-articular fusion	2
Extra-articular fusion	4
Partial resection	2
Resection	1
Refusion (1 case twice)	2

In early cases we used grafts from the ilium and the trochanter for the extra-articular fusions, but in later cases fibular grafts were used, driving them through the trochanter into the ilium. It would be appropriate at this time to state that there is less shock and more comfort to the patient, and considerably greater ease of technic to the surgeon in removing part, or almost all, of the fibula in place of the tibia or ilium as a source of bone.

In early cases, treated both operatively and conservatively, in single hip spica casts, we found that an adduction deformity occurs in spite of the cast and regardless of how carefully the cast was applied. It is now our procedure to always place these patients in a double hip spica cast, extending down the well leg at least to the knee.

Our end-results show excellent in four cases, good in three, and poor in one. This one poor result (an intra- and extra-articular fusion) was in a patient who developed multiple draining sinuses, fistulae into the bladder and bowel and marked amyloidosis, without any fusion.

KNEE. There were ten patients who had knee fusions. Nine of these were originally fused following the technic of Hibbs, except in two cases the patella was anchored down with cow-horn pegs. Three cases were re-fused because of

a slight range of painful motion. These were re-fused through medial and lateral incisions (without breaking up what fusion was present) and a sliding bone graft from the femur was placed across the joint line. All had subsequently good fusions. In one case an amputation was advised because of the extensive involvement of both the tibia and femur, and resection was not sufficient to control the spread of the disease, but the patient refused further treatment and left the hospital.

SHOULDER. There were three patients who had tuberculosis of the shoulder, and in each case the surgical technic was varied slightly; one had the cartilage of the glenoid and head of the humerus removed; one had the acromium used as a strut (extra-articular); and one had a combination of the above two procedures. In all three cases a good fusion was obtained.

CALCANEUS. The case of calcaneotomy is of special interest. When first seen she had pain in the heel, and a fluctuant swelling on the medial side of the calcaneus. Aspiration of this was positive, both bacteriologically and by guinea pig inoculation for tuberculosis. X-ray findings showed a slight destruction of the calcaneus. She was placed in a long leg cast for four months, with no weight bearing. Further roentgenograms

after the four-month period revealed a marked increase of the destructive process, limited entirely to the calcaneus (see figure 1). At this time a calcaneotomy was done through a lateral incision, and the gastrocnemius tendon was sutured into the back of the astragalus. After three years the patient has excellent function of the foot, is able to stand on tip-toe, and walks in a regular shoe with a small felt pad in the heel. A roentgenogram taken two years after operation is shown in figure 2.

SACRO-ILIAC JOINT. This one patient had had symptoms for 16 years, with pain and multiple draining sinuses. The joint was adequately exposed, thoroughly cleaned out, and packed wide open with vaseline gauze packing. Since operation she has been entirely free of pain, but occasionally develops a small sinus which drains for a short period and then closes. Roentgenograms show a good fusion.

SUMMARY.

1. Forty-one cases of tuberculosis of joints reported, with forty-eight operative procedures, with two deaths — one immediately postoperatively, and one from a late tuberculous meningitis; an operative mortality of 2.08 per cent.

2. Conservative treatment is adhered to until such time as the patient shows evidence of in-



Figure 1

creased resistance to his infection.

3. Adequate postoperative fixation in plaster of paris casts is used routinely. This is especially true in fusion of the hip, where double hip spica casts are used to prevent adduction deformity.

SPINE

Cases: 17

Average duration of symptoms: 4.73 years

Age range: 2 years to 30 years

Location of pathology:

Dorsal vertebrae — 12 cases

Lumbar vertebrae — 4 cases

Cervical vertebrae — 1 case

Average length of time of conservative treatment — before surgery

Casts — 4.70 years

Frame — 1.18 years

Roentgenological Findings:

Psoas abscess — 15 positive cases

Lungs — 1 case positive — parenchymally

5 cases negative — parenchymally

16 cases clinically negative

Family History of Tuberculosis:

Positive — 5 cases

Negative — 10 cases (1 case — tuberculous testis removed 5 years previously)

Questionable — 1 case

Unknown — 1 case

Surgery: 19 Fusions

Hibbs — 16 cases

Hibbs-Albee — 1 case

Refusion for pseudo-arthritis — 2 cases

Average number of vertebrae fused: — 7.2 vertebrae

End-Results:

Excellent — 15 cases

Poor — none

Died — 2 cases (1 immediately postoperatively 14 months later — tuberculous meningitis)

Average Length of time Since Fusion: 3.5 years

HIP JOINT

Cases: 8

Involvement:

Right — 5 cases

Left — 4 cases

Both Hips — 1 case

Age Range: 7 to 24 years

Average Duration of Symptoms: 3.43 years

Average length of time of conservative treatment:

Cast (hip spica) — 1.5 years

Traction — 6 months

Roentgenological Findings:

Lungs — 8 cases negative

Joint — 8 cases positive varying from

Decalcification — 2 cases

Destruction — 7 cases

Abscess — 3 cases

Family History:

Negative — 5 cases

Positive — 3 cases

Surgery:

Intra- and extra-articular fusion — 2 cases



Figure 2

Extra-articular fusion — 4 cases
 Partial resection — 1 case
 Resection — 2 cases
 Refusion — 1 case which had:
 (a) Extra-articular fusion
 (b) Intra- and extra-articular fusion

End-Results:

Excellent — 4 cases
 Good — 3 cases
 Poor — 1 case (developed multiple draining sinuses and fistulae into bladder and bowel)

KNEE JOINT

Distribution:

Right knee — 6 cases
 Left knee — 4 cases

Average duration of symptoms: 5.25 years

Age range: 9 to 38 years

Average length of time before fusion was complete:
 1.0 years

Surgery:

Hibb's Fusion — 10 cases, in which 2 cases had the patella anchored with cowhorn pegs
 Refusion by sliding bone grafts — 3 cases
 Partial Resection — 1 case (Amputation advised but refused)

Associated other joints with tuberculous involvement:

Shoulder — 1 case
 Spine — 2 cases
 Finger — 1 case

Roentgenological Findings:

Lungs — 1 case suggestive
 Joints — 10 cases — Range of destruction varied from subchondral atrophy to complete destruction

Precipitating Cause:

Insidious — 3 cases
 Trauma — 7 cases

End-Results:

Excellent — 8 cases
 Fair — 2 cases (have fibrous fusion only, but do have relief from symptoms)

SHOULDER

Average duration of symptoms — 3.8 years

Age range — 13 to 22 years

Type of Tuberculosis — Sicca

Distribution — Right shoulder — 0 cases
 Left shoulder — 3 cases

Surgery:

- (1) Removal of Cartilage of humerus and glenoid
- (2) Removal of cartilage of humerus and glenoid, and after nine months acromium strutted down into humerus for better fusion
- (3) Intra- and extra-articular fusion

Complication — None

Roentgenological Findings — All typical of caries sicca

Precipitating cause — Trauma in 3 cases

Results:

Good — 3 cases

FOOT

Right Calcaneus — 1 case

Age: 7 years — This case discussed above, see figures 1 and 2.

Right Astragalus:

Age — 31 years

Surgery — Atragalectomy

Other joint involvement: Right hip fusion in 1923

Results: Good — 1 case

SACRO-ILIAC JOINT

Left Sacro-iliac joint — 1 case

Age — 31

Surgery — complete saucerization with vaseline pack afterwards — Three months later cast discarded — good clinical result — slight occasional drainage.

1853 West Polk Street

THE ETIOLOGY OF STAMMERING; AN EXAMINATION INTO CERTAIN RECENT STUDIES; WITH A GLANCE INTO THE FUTURE

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CHICAGO

I. ARNOTT, BLUEMEL, AND MAKUEN

In introducing his own study of the etiology of stammering, in 1912, C. S. Bluemel, A.M., M.D., psychiatrist, stated the attitude of his predecessors on this subject in part as follows:—
 *"We shall consider first the theory of its cause that finds at the present time the widest acceptance among pathologists. This theory supposes that stammering is due to a delay in vocalization; in other words, to the stammerer's inability to produce voice. The theory was first promulgated by Dr. Neil Arnott, in 1827, in his 'Elements of Physics.' Later the theory was supported by Merkel in Germany. Merkel no doubt advanced the theory independently, as many other writers have done since the time of Arnott."

Thus Arnott, Merkel, Wyllie, Bastian and others had conceived of stammering as due to

*Stammering and Cognate Defects of Speech, by C. S. Bluemel, Vol. I, page 181.

some unknown manner of faulty "delay" or "hesitation" in the action of the laryngeal mechanism of voice production. While the conception was vague and incomplete it did locate the division of the speech function which primarily seemed to its sponsors to be at fault.

The attitude of the pre-Bluemel students as to the etiology of the disorder was, 1. to analyze the peripheral phenomena of stammering, and 2. to attempt to conceive of their cerebral explanation. In truth, however, little progress was actually made in either of these two basal aspects of the problem.

Dr. Bluemel, while still adhering to the belief of Arnott that the basal impediment in the speech was due to a default in the production of voice, attributed the defection in the production of voice not directly to failure in the action of the larynx, as had been conceived by the theory of Arnott, but indirectly by the "recoil" from the mind of the vowel succeeding the sound stammered on. The basis of this theory, in so far as it is related to the symptoms of the speech disorder, has now been definitely refuted.* The author 1. did not appreciate definitely what the psychophysiologic act of stammering was; 2. did not understand closely the psychophysiology of laryngeal action; 3. attempted to explain stammering only on the consonant and not on the vowel, which is just as important as stammering on the consonant; 4. failed to appreciate the importance of sound sequence in the word in determining the sound stammered on, and, finally, did not appreciate the absence of a definite distinction between the psychophysiologic character of vowel and consonant sufficient to render the "recoil" theory possible.

In a later book* than that already quoted, Dr. Bluemel elaborates his conception of the etiology of stammering; he now conceives of the speech disorder as an "inhibition," and employs the conditioned reflex conception of Pavlov in its explanation. This conception will be commented on later, in connection with the psychologic conceptions of other authors.

G. Hudson Makuen, M.D. (1855-1917), an otolaryngologist of wide understanding of medi-

cine and speech, overlapped the period of Arnott and of Dr. Bluemel, and was sympathetic with both of their conceptions. At various times Makuen had made tentative attempts to connect the peripheral phenomena of the disorder with their possible cerebral cause. *¹In 1915 he regretted that a cause for "the faulty laryngeal action and consequent delayed vocalization of Wyllie could not be found." In the same essay, apparently influenced at least to some degree by Dr. Bluemel's then recent book,*² and certainly having the aphasias in mind, he made what may turn out to be a significant statement, "Stammering probably has a physical basis which may or may not be demonstrable." In 1916, the year preceding his unfortunate sudden death, Makuen wrote,*² "Stammering, at least in its chronic forms, is essentially a psychoneurosis, whatever may have been the original cause."

2. PSYCHOLOGISTS AND PSYCHIATRISTS

*In the Quarterly Journal of Speech for October, 1937, appears a more or less comprehensive statement of each theoretic conception of the etiology of stammering, by the following psychologists and psychiatrists. Each statement of theory is officially approved by its original sponsor. The statements appear in the following order:

Smiley Blanton, M.D., Psychiatrist, Cornell Medical College, New York City; Lee Edward Travis, Ph.D., Psychologist, University of Iowa (now of the University of Southern California); C. S. Bluemel, M.D., Psychiatrist, Denver Colorado; John M. Fletcher, Ph.D., Psychologist, Tulane University, New Orleans, La.; James Sonnett Greene, M.D., Psychiatrist, Medical Director of the National Hospital for Speech Disorders, New York City; Mrs. Mabel Farrington Gifford, Chief of the Bureau of Speech Correction for the State of California. I also include in the list a *study of the etiology of stammering by Meyer Solomon, M.D., Psychiatrist, Northwestern University Medical School, Chicago.

*1. The Psychology of Stammering by G. Hudson Makuen, New York Medical Journal, pp. 2 and 3, July 17, 1915.

*2. Psychology of Diseases of the Respiratory Tract by G. Hudson Makuen, M.D., New York Medical Journal, September 23, 1916, p. 12.

*A Compendium of Some Theories and Therapies of Stuttering, by Eugene F. Hahn, University of Southern California. Vol. XXIII, No. 3; October 1937, p. 378.

*The Journal of Speech Disorders, December, 1939.

*"A Critical Examination of the Foundations of the 'Recoil of the Vowel' Theory of the Cause of the Impediment of the Speech in Stammering," by Elmer L. Kenyon, M.D., Journal of Speech Disorders, Vol. V, No. 2, June, 1940.

*Stammering and Allied Disorders; by C. S. Bluemel, M.A., M.D., New York, the Macmillan Company, 1935.

I submit that this is a formidable array of psychologic and psychiatric talent for me, an otolaryngologist, to approach as a body critically, in the matter of their efforts to solve the etiology of stammering. But perhaps, unawares, they really do need to confer with me.

Each of these students presents some manner of individual abnormal psychology as the sole explanation of the disorder of stammering. The assumption that a general psychologic disorder, of whatsoever kind, can be the sole explanation of stammering may turn out to be correct or incorrect. After all it is an assumption. No proof has been offered. As to what particular kind of psychologic abnormality may be the cause of stammering the authors themselves are in disagreement.

Moreover, as it seems to me, the manner of their approach to the problem is unquestionably faulty. The very definition of stammering, as its fundamental idea, must conceive of a speech disorder of a peculiar and unusual type, involving complete stoppage of the speech; or of its definite, characteristic retardation, usually attended with struggle, while devoid of clean cut stoppage.

Succeeding Makuen, an otolaryngologist, these psychologic and psychiatric students have all diverged completely away from the conception of Arnott and his many followers, whose minds were primarily focused on the basal symptom of stammering, i.e. the impediment of speech, and who felt that this speech disorder must, primarily, as the fundamental symptom, be understood and explained. On the other hand, these later students have made no attempt whatsoever either to define, or even to closely study, these complex peripheral phenomena of speech, but have apparently jumped, without reasoning, at the conclusion that whatever the primary speech disorder might turn out to be — if some one should chance to closely study it — it must be what it is solely because some manner of general psychologic or psychiatric disorder serves to make it so. In view of the psycho-physiologic definiteness and complexity of this speech disorder, and in view of its etiologic significance as the basically most important symptom of stammering, this assumption that it must be based on general abnormal psychology, is not clearly founded, and is likely to turn out to be untrue.

To these authors, stammering is an emotional,

or personality, or "cerebral dominance," or psycho-analytic, or other manner of abnormal psychologic disorder, each of which manner of psychologic or psychiatric disturbance must, according to its particular sponsor, as a matter of course, explain the impediment of speech, no matter what its nature may be. But if emotion, or disordered personality, or disturbed cerebral dominance, or psychoanalysis, or other psychologic disturbance, each of which conceptions some one, or more, of these authors upholds, could alone produce this strange characteristic stoppage and struggle in the action of the speech mechanism, *regularly in all cases*, we should be told exactly how; but no such explanation has been offered, or, evidently, since the speech phenomena have not been closely studied, even conceived. By failing to study closely the nature of the impediment of speech as the basal symptom, these students, it seems to me, have placed themselves in the anomalous position of seeking an explanation of a complex phenomenon the nature of which they have not even deemed it worth while to try to understand. Naturally such a narrow approach to the problem has attained to very little etiologic consequence. We are practically as far from attainment by such studies of a real solution of the etiology of stammering as when these studies were begun, more than a quarter of a century ago. Why? Because the fundamental symptom, the impediment of the speech, is just as far from solution as it ever was. Moreover, treatment of the disorder, leading *systematically* to recovery, or even to important improvement, is still, as every close student of stammering well knows, unattained by the psychologic or psychiatric methods evolved from such etiologic studies.

3. THE IMPEDIMENT OF SPEECH

The reasons why I believe that stammering is primarily a speech disorder I shall begin to suggest in this essay, but I now wish, as a part of this immediate discussion, to state what, in my observation, the primary, basal, impediment of the speech really is on the peripheral side. This statement represents a close and persistent study of the peripheral facts of stammering. Since the speech machine necessarily can produce but one chest-laryngo-articulative-palatal act (on which each sound of speech depends) at the same time, each act of talking, as well as each impediment

of the speech in stammering, must have reference to the production of a single sound. The present statement will concern only the typical complete impediment of the speech, the stoppage, or "blocking," and not its various modifications and distortions that produce merely struggle and retardation.

When in the course of speech the stammerer finds himself unable to produce a certain sound the speech machine, nevertheless, continues in full action in each of the chest, laryngeal, articulative and palatal divisions. In spite of this continuation in the action of the muscles of speech, in all of its divisions, the *movement* of the chest wall and the passage of breath at the larynx, momentarily cease, and no vocal sound is forthcoming. Disregarding at this time the comparatively unimportant secondary muscular overaction, especially for articulation, the articulative and palatal activities are in principle produced normally.

During a complete and typical act of stammering, then, the physiologic status is that of the speech mechanism continuing in action for each of its divisions as if to produce speech, with articulative and palatal placements made in principle normally, and yet with complete absence of the passage of breath through the larynx and the production of voice. This manner of disturbed action of the speech mechanism in talking is not only identical in principle for all stammerers, which, if caused by emotion, or "neuroticism" or other abnormal psychologic states, would in itself be most remarkable, but psychophysiologically it is far different from a mere "hesitation" in the speech. Only one explanation for such a psychophysiologic disordered action of the larynx is possible, namely, that the chest-laryngeal mechanism is acting not to produce, but to *prevent* the passage of breath and production of voice. All single acts of stammering, whether a stoppage, complete and typical, or a retardation, being a partial and distorted stoppage, are based on the above stated abnormal action of the chest-laryngeal muscular mechanism.

Such is the essential abnormal peripheral act of stammering, the close study of which recent students of etiology have completely disregarded.

I now venture to express my carefully considered opinion that the origin of stammering, complicated and extremely difficult of under-

standing though it be, nevertheless has no necessary causal relation to abnormal personality, to emotion, or to psycho-analysis or to disordered cerebral dominance, or to other general psychologic abnormality of behavior. And also I venture to express my fully considered opinion, that this extraordinary basal symptom of the speech disorder undoubtedly does demand clear psychophysiologic understanding, before the etiology of stammering can possibly be discovered.

4. THREE POSSIBILITIES

As a necessary basal step in the etiologic solution of the problem, the disorder of speech still cries out for understanding. That stammering might be *primarily* a speech disorder, having a psycho-physiologic abnormality of action as its basis, which, by reason of the compelled stoppage and retardation in the laryngeal production of voice coupled perhaps with other unrecognized psychologic influences, could be the *cause*, rather than the consequence, of the well known emotion and peculiar behavioristic social attitudes of the stammerer, seems not to have been conceived by these recent psychologic and psychiatric students. One of these two points of view is right and the other is wrong; either 1, stammering is basically and primarily a speech disorder, involving an essential and remarkable psycho-physiologic impediment in the production of speech, which, complicated by certain psycho-social influences, leads to the emotion and peculiar behavioristic attitudes of the stammerer; or 2, stammering is basically an emotional, or a personality, or a disturbed cerebral dominance, or a psychoanalytic or other manner of general psychologic disorder which, through some mysterious unknown chance, superinduces in every case these definite, closely similar, inexplicable, complicated, peculiar characteristic abnormal muscular activities of the speech mechanism during speech; or 3, as a compromise conception, stammering, although basically a speech disorder, might (perhaps only in certain instances) be influenced as to its origin by general abnormal congenital, psychologic or psychiatric factors.

5. KENYON

Concluding this present comment on certain recent studies of the etiology of stammering, I desire to call attention to an essay published in

1930 by myself,* which followed (independently) in the footsteps of Arnott, in locating the cause of the impediment of speech in a definite wrong action of the larynx, consisting of the complete closure of the vocal cords, thus preventing voice production. Since the presentation of that essay a long patient continuation of this study has served to confirm those earlier tentative impressions, and that essay will be referred to in a later continuation of this study.

6. ARE ALL STAMMERERS PSYCHOLOGICALLY ABNORMAL

Let us now inquire for a moment how certain of these recent students of the etiology of stammering may have arrived at the conclusion that all cases find their origin in "emotion," or "neuroticism," or other "abnormal personality" factors on the part of the stammerer. The authors themselves do not answer this query. Apparently they view the extraordinary speaking behavior of the mature stammerer, and note that certain individuals are definitely "neurotic," or extremely emotional, or possess other personality abnormalities, and conclude, therefore, since all stammerers behave in talking much the same, that all are, from a congenital standpoint, psychologically abnormal. But stammering *begins* in childhood, and the susceptibility to, and the repeated production of, disturbed speech with its consequent embarrassment, is certainly capable, as is commonly agreed, of producing subjective psychologic disturbance of a more or less serious degree, and, especially, and quite naturally, is capable of superinducing emotion in social relations even in the normal individual. Excepting as to the stammerer whose "neurotism" is congenitally extreme, the *only* time in which the congenital psychologic normality or abnormality of the stammerer, during the period of stammering, can be certainly determined is either before, or reasonably soon after, the disorder in talking has begun. But of this evident truth we hear nothing.

Moreover, I cannot help wondering whether the recovered stammerers of these students indicate definitely to them in all cases the kind of congenital psychologic abnormality that, be-

cause they stammered, has been attributed to them. I would like to have them point out the congenital psychologic abnormality that originally superinduced stammering in *my* recovered stammerers. I myself have failed to discover such abnormality.

My own point of view leads me to search not chiefly for *congenital* psychologic abnormalities, but for the *acquired* abnormal psychologic effects of the stammering. And these I have no trouble in detecting. They are indicated as acquired and not congenital largely by the fact that in case the stammerer recovers they are eradicable as and after the stammering ceases.

In support of my contention that stammerers are by no means necessarily abnormal psychologically in a congenital sense I now refer to other close students of stammering who hold the same belief: The senior Herman Gutzmann, M.D., late of Berlin, unquestionably much the greatest student of disorders of speech who has yet lived, and under whom I was privileged to be a pupil, told of a well known man of middle age in Germany who stammered severely, frequently, and constantly, and yet who was never emotional. No one who realizes the depth of Gutzmann's knowledge in this subject would dare to question his capability of observation in such a matter. At this time I will not appeal further to Gutzmann in this connection, as I may do at another time, but will state that I myself have observed long and closely an almost identically similar case of very severe and constant stammering in a young man just over twenty, evidencing little emotion. And, indeed, I believe that in all cases stammering occurs without, as well as with, emotion.

A second important student of disorders of speech, the late G. Hudson Makuen, M.D. of Philadelphia, under whom I was also privileged to be a pupil, in 1916, at the end of a review of the then current theories as to the etiology of stammering, made the following wise comments:— *"Another neurologist claims that the defective inhibition found in stammerers may best be explained in terms of the tics, and that stammerers are for the most part neurasthenic and psychasthenic, and it is well known that many stammerers belong to this class, although

*The Peripheral Physical Inhibition of Speech, an Essential Phenomenon and an Important Causal Factor of Stammering. Elmer L. Kenyon, M.D. The Archives of Otolaryngology, December, 1930, Vol. 12, pages 769-784.

*Some Recent Theories on the Causation and Treatment of Stammering. G. Hudson Makuen, M.D., Philadelphia. The Laryngoscope, St. Louis, May 1916.

it is also well known that comparatively few neurasthenics and psychasthenics are stammerers, and many of those having various forms of tics show no disturbance of speech whatsoever. The problem of finding a causal factor which is common to all stammerers, therefore, still remains unsolved."

*Dr. C. S. Bluemel found the exhibition of extraordinary emotion not at the origin of stammering but only towards and at its maturity, where, as I have intimated, it quite fails to help out the theories of recent psychologic and psychiatric students.

Certainly, if, from a congenital standpoint, certain stammerers are psychologically normal and others are psychologically abnormal, no theory which applies to the latter class alone could possibly serve, as Makuen intimates, and as all must agree, as an explanation of the etiology of the disorder. My own observation tells me that, excepting for the damaging influence on their minds and on their social behavior, of repeated stammering and of almost constant serious embarrassment, stammerers are for the most part as normal psychologically as any other average group of individuals.*

Another fact is worth consideration in this connection. Stammering not only injures the stammerer psychologically, but also psychophysically, as to voice production. My treatment of stammering regularly includes not only the attempt to eliminate the speech disturbance, and its psychologic effects, but also to correct the important and otherwise usually permanent characteristic psychophysiologic disturbance in the production of voice. Indeed I do not see how stammering can be systematically treated with success without especial consideration of this acquired wrong psychophysiologic habit of voice production, which I shall discuss at a later time.

Whether the congenitally psychologically normal or the psychologically abnormal class of children be under discussion, the *enormous majority* of individuals, as Makuen suggests, in either class, pass through the long years of speech development of childhood, when stammering is especially prone to develop, and on through the years of youth and adulthood, without any

subjective or objective indication whatsoever of being in danger of developing stammering. I have watched especially the highly emotional individuals, who seem to be utterly free, excepting in rare instances, from danger in this direction. And the same is true of normal children. Only rarely is one caught in the "trap" of stammering. If this statement be true, no such direct causal relation on a mental basis alone between the psychologically, congenitally abnormal individual and stammering, as is conceived by recent theorists, is likely to be true, but, on the other hand, such facts inevitably must lead one to seek an especial causal factor to account for the *occasional* stammerer from either the congenitally psychologically normal or abnormal group.

If it be true, and it may be, that the psychologically abnormal child is relatively more susceptible to the danger of developing stammering than the normal child, the difference in degree of susceptibility seems to me, at this time, not to be highly conspicuous.

All of which discussion thoroughly discredits the idea that stammering is explicable on the basis solely of excessive emotion, or of "neuroticism," or of "abnormal personality."

7. WHY RECENT EFFORTS HAVE FAILED

Because of the many students who have conceived independently that stammering was basically a disorder of voice production the Arnott conception cannot belightly cast aside. The failure of the Arnott School to attain to important etiologic results is hinted at quite directly by the above statement of Makuen, that a cause for "the faulty laryngeal action and consequent delayed vocalization of Wyllie could not be found." Why it could not be found may have been due to the failure to search for it beyond the merely superficial observation of stammering as a disturbance in the psycho-physiology of laryngeal action and of voice production. These investigators perhaps started right but stopped their investigation while it was still on its most superficial level.

To conceive of understanding the impediment of speech in stammering as a disturbance in voice production, without attempting to understand closely the psychophysiology of laryngeal action, constituted a vital desideratum on the part of these students. Only such psychophysiologic laryngeal studies could possibly put the

*The writer cannot now recall where in Dr. Bluemel's voluminous writings this statement appears.

*When the writer shall arrive at the discussion of the psychology of stammering, in a future essay, he will be able to throw additional light on this subject.

real teeth into this theory which it may yet be shown to possess.

Stammering is fundamentally a disordered action of speech, or, perhaps, of voice production. This constitutes its basically determinative symptom. Any successful conception of etiology of the disorder *must*, at any rate, explain this symptom. For recent psychologists and psychiatrists to theorize that congenital psychologic, or psychiatric, disorders, or disturbances, could superinduce this complex disorder of speech, without even trying to understand closely what that speech disorder was and to indicate definitely how their theories could explain it, was to work with a hopeless vagueness of conception. The psycho-analysts were able to perceive only the particular superficial aspects of the impediment of speech which fitted into the needs of their theory, and, therefore, they of course likewise fall into the general failure to solve the problem. Moreover, those authors whose theoretic conceptions are based on the universal congenital "neuroticism" or "personality disorder" of stammerers, in view of the existence of the strongest evidence that a very large proportion of stammerers are psychologically normal, have, as I believe, failed doubly to solve the problem. And since only occasionally does the psychologically normal, or abnormal class of children suffer from stammering, it becomes absolutely necessary to explain why *only* these particular children, and not all in each group, are affected. As Makuen intimates, a real etiologic theory as to stammering demands an explanation of the speech or voice, disorder, as suffered by both the psychologically normal and abnormal child, and this, insofar as my knowledge goes, no one has as yet intelligently attempted.

Seeking the real reason for the recent failures on the part of psychologists and psychiatrists to attempt in a complete sense to solve the etiology of stammering, one should bear in mind that the function of speech is a psycho-physiologic function. The factor of physiology is present in almost all problems of functionally disordered speech, and rarely is a functional disorder of voice or speech completely soluble solely on a general psychologic, or psychiatric, basis. The trouble is that the field of study and work in the United States in disorders of voice and speech, speaking of the individual student, is top-heavy with a knowledge of general psychology and

psychiatry, and is pathetically weak in the equally essential realm of specific psychophysiologic knowledge of voice and speech production; and so long as this one-sided status of individual knowledge exists among students of speech disorder, such unbalanced studies as those under discussion are, it seems to me, likely to continue.

8. THE FUTURE

After very many years, even centuries, of effort, by scores of students, the complete failure to solve so complex a problem as the etiology of stammering, strongly suggests that new significant knowledge on which the solution shall finally depend, must first be brought to light. The facts already understood do not offer a solution. Unless one finds as yet undiscovered patent facts, a solution will continue to remain impossible.

The most obvious, striking and significant symptom of the disorder, its onset during the speech development period of childhood, has curiously been given little attention by students of etiology. Approximately ninety-five per cent. of the cases begin before the seventh year of age and most of these cases in the second, third, and fourth years. Nearly all instances of onset have ceased at fourteen years. The fact that stammering is a disorder in the production of speech and that it originates in most instances during the speech development period of childhood, certainly suggests that at any rate the impediment of the speech involved in stammering could possibly be related to difficulties in speech development. But, up to this time no one has deemed it worth while, for example, to delve into the psychophysiologic foundations, especially of the development of voice for speech purposes by the child. If the etiology of stammering is ever to be discovered, the effort to be made must, in my opinion, begin at the beginning, by acquiring a knowledge of how psychophysiologically the impediment of the speech, or perhaps of voice, is produced, and the significance of such impediment, a study, which, to my knowledge has never been seriously attempted. In order to solve this basal problem as to the nature of the speech impediment, I believe the following items of knowledge must be acquired: 1. Definitely what happens psychophysiologically in the production of the impediment of the speech when the individual stammers; 2. the

psychophysiology of laryngeal action in all its phases, including animal functions, as well as the production of voice; 3. the psychophysiology of voice development for speech by the child, and the possible dangers involved in that effort. With such knowledge in hand, coupled with the host of other facts generally understood, it may become possible to evolve an etiological understanding of the many questions involved in the problem somewhat as a novelist evolves the coherent details of his story.

9. SUMMARY AND CONCLUSIONS

1. The purpose of this essay has been to clarify the present status of the study of the etiology of stammering, preparatory to presenting an entirely new etiological conception.

2. The author has recently shown the untruth of the "recoil" conception as to the cause of the impediment of speech in stammering.

3. The theory of Arnott, that stammering results from a faulty action of the larynx in producing voice, may be of real importance, but as yet it has never been completely worked out.

4. The author shows the incompetence of those recent theories that find the explanation of stammering solely in the congenital general psychology abnormality of the stammerer, or in psycho-analysis, or in disturbed cerebral dominance, or in other psychology abnormality. None of these theorists has deemed it necessary to understand closely either the basal symptom of the disorder, the impediment of speech, or its relation to the psychophysiology of voice and speech production, or to connect their theories causally with the impediment of speech. These failures render the theories under discussion unquestionably incompetent.

5. Evidence is presented indicating the congenitally psychology normality of a very large proportion of stammerers, and this evidence strongly opposes the conception that the universal explanation of stammering lies in "neuroticism," or "disorders of personality."

6. To hope to understand the etiology of stammering without a close knowledge of the psychophysiology origin and nature of the impediment of the speech, is, in the author's opinion, unthinkable, and this knowledge remains as yet undiscovered.

7. The author regretfully points out that the

individual educational status of students and workers in the field of disorders of speech in the United States is at present topheavy on the side of general psychology and psychiatry knowledge, and is pathetically weak on the side of the specific psychophysiology of voice and speech production.

8. The author's own belief is that the impediment of speech is not a result of general psychology or psychiatry disturbance, but that it is caused by a specific psychophysiology disordered action of the larynx in producing voice. He also believes that the characteristic behavioristic attitudes of the stammerer are caused by the embarrassment brought about in large part through the constant and serious uncertainty of his ability to talk normally. This conception reverses the order of cause and effect as presented by recent psychology and psychiatry theories.

9. Indicating with apparent certainty the correctness of the author's etiology conception, the employment of a new method of treatment based upon it has been attended with no failure to bring about complete and permanent eradication of the disorder at certain ages — nine, ten, eleven and twelve — during the past six years. Regularity of success in treatment (which indicates the practical possibility of the eradication of the disorder nationally after age twelve) thus has for the first time been achieved.

10. In an essay soon to follow the present, the author proposes to present a careful study of laryngeal action in its relation to the cause of the impediment of the speech in stammering.

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PARALYTIC ACCIDENTS DUE TO RABIES VACCINE

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Since the origination of vaccination against rabies by Pasteur in 1885 it has been recognized that this method and various modifications occasionally cause secondary paralytic syndromes. It is our purpose to report such a case and call attention to the unfavorable neurological reactions which antirabic treatment might cause. It must be emphasized that the rarity of these accidents is far outweighed by the value of anti-

rabid vaccination. No one should withhold immunization against rabies when it is indicated. In general these indications are a bite by a rabid animal or an animal whose freedom from rabies cannot be absolutely ascertained, or the saliva of such animals coming in contact with the broken skin or unbroken mucous membranes.

Remlinger¹ has taken a special interest in the complications of rabies prophylaxis. His papers represent a statistical analysis and review of the reports from Pasteur Institutes throughout the world up to 1927. At this time he collected 329 cases of paralytic accidents occurring in 1,164,264 inoculations (0.028%). From 1927 to 1938 McKendrick² reported 139 cases in 755,891 treatments (0.017%).

The original Pasteur vaccine was emulsified cord of rabbits which had been inoculated for a certain length of time with rabies virus. The virus used was called the fixed virus to distinguish it from the street virus or the virus as found in the ordinary rabid animals. This fixed virus has an incubation period of about seven days, whereas the street virus has a longer period of about 28 days. These cords were dried for various lengths of time. The drying was assumed to attenuate the virus, but in reality probably kills varying amounts of the virus in proportion to the amount of dessication. Succeeding doses were graduated using cords which had been progressively less dessicated. Thus, the material used toward the end of the treatment contained appreciable amounts of living fixed virus. Numerous modifications of these methods have been advocated and used. These vaccines may be divided into two main classes: (1) Those containing living virus, (2) Those containing killed, or at least "avirulent", virus.

The effect of these various vaccines on the incidence of paralytic accidents is shown in the accompanying tables.

TABLE 1					
Method	No. of Treat- ments	No. of Acci- dents	Per Cent. In- cidence	Classi- fication	Deaths
Dried Cords	114,214	31	0.027	Living	3
Dilution	62,837	24	0.038	Living	17
Killed Phenol	353,732	35	0.010	Killed	11
Live Phenol	3,464	0		Living	
Fermi	7,319	3	0.027	Killed	2
Heated	93,145	8	0.009	Status uncertain	2
Killed Ether	63,444	8	0.011	Killed	3
Mixed a.	49,656	26	0.052	Probably living	3
b.	2,671	1	0.037	Probably living	0

Smith³ reports that using a living fixed virus

from rabbit brain, ground with saline and sent out fresh daily, gave no accidents in 13,829 cases. Park and Williams⁴ report four accidents, but no deaths, in 12,768 cases using Semple vaccine.

Table 1 was compiled from reports of the various Pasteur Institutes from 1927 to 1938 and included no reports from the United States. McCoy⁵ collected from data furnished by leading producers of the vaccines in the U.S.A. the following:

TABLE 2					
Method	No. of Treat- ments	No. of Acci- dents	Per Cent. In- cidence	Classi- fication	Deaths
Semple and Similar modifications	17,645	6	0.034	Killed	4
Frozen and Des- sicated Virus	4,148	2	0.048	Living	0
Hoyges	2,593	0		Living	
Pasteur	1,077	0		Living	

Considering the etiology and pathogenesis of these accidents, many theories⁵ have been advanced. By far the most likely idea is that the paralysis is due to the inoculation of a foreign protein. Practically every vaccine, serum, or other biological has at some time or other caused paralytic symptoms similar to those following rabies vaccine.^{6,7,8} As is well known with other foreign protein reactions a special susceptibility on the part of the person affected must exist. Many cases, as in the present one, are known in which only one person of a group treated with the same vaccine has developed paralytic manifestations.

Another theory postulates that the accidents are a modified or paralytic rabies which is due to the street virus, but which the vaccine has modified. There are numerous reasons why this is wrong. In the fatal cases the pathological features have not resembled rabies; thus, no Negri bodies have been demonstrated. (Investigators have not agreed on the constancy of other pathological findings.⁹) Fatal accidents have occurred in treated patients who have been bitten by animals proved free of rabies, or whose association with rabid creatures has been too minimal to expect infection. It has never been shown that the brain substance from fatal cases contained a virus causing rabies when inoculated into susceptible animals. The incubation period of rabies is much greater than the time interval between treatment and cases of paralytic accidents.

It has been suggested that the fixed virus contained in the vaccines itself might be the responsible agent. It is evident that the foregoing tables indicate that more accidents tend to follow the use of living than the killed vaccines. Again the fact that such a virus has not been demonstrable in those dying from the untoward effects of rabies vaccine weighs heavily against this idea. Another factor which tends to make this untenable is that fatal accidents have followed the use of the killed vaccines (see tables), although it has been questioned whether the phenolized and other "killed vaccines" are entirely free of living virus.¹⁰ The above evidence seems to exonerate the living fixed virus. It might be said in passing that fixed virus infection induced intentionally in animals does not give rise to Negri bodies;¹¹ hence, their absence does not weigh against this idea, as it does against the street rabies theory.

It is possible that other viruses known to exist as parasitic or inapparent viruses in the neural tissue of apparently normal rabbits¹² may exist in these vaccines. Although non-pathogenic to rabbits, they may not be so to man, because pathologically and clinically similar paralytic syndromes occur spontaneously¹³ and following other vaccines and biologicals would seem to exonerate a living virus as the cause.

A striking fact is that children account for a small number of the accidents¹ although about 50 per cent. of all treatments are given to the younger group. These paralyzes occur not alone in man but dogs and other animals given anti-rabic treatment. The small number of cases reported in the American literature may be because the Semple method is most prevalently used in the United States. Other vaccines used in America are those prepared by the Cummings method (killed or avirulent) and other procedures which kill the virus.

The symptomatology of these paralyzes has been customarily divided into three types. They may all have such premonitory signs as vomiting, lumbar pains, chilliness, fever, and pain, numbness or tingling in a muscle or muscle group preceding paralysis.

One type resembles a Landry's paralysis, presenting a condition which one would expect with ascending ablation of cord function namely; paraplegia, urinary and rectal retention, pains in extremities and girdle pains. Later, pains

in upper limbs which in turn become completely paralyzed. The symptoms may stop here or go on to bulbar paralysis and subsequent impairment in breathing, deglutition and speech. The paralysis is of the lower motor neuron type with absent reflexes and flaccidity of the muscles. The mortality of this type is stated to be 30 per cent. Those not fatal usually recover completely in a few days to several weeks with varying residues of weakness. Another type resembles a dorsolumbar myelitis. This is a milder form presenting gradual weakening of lower limb muscles to complete paralysis with absent reflexes. A marked diminution to complete loss of all sensory modalities may occur. Bladder and rectal paralysis is usually present. Pains and paresthesias may be present in the upper limbs with occasional weakness or paralysis. Recovery is complete in a few weeks. Mortality in this group is about six per cent. The third type is that presenting the usual symptoms of a neuritis of one or more peripheral nerves. Following rabies vaccine the facial nerve seems to be especially susceptible. The case being presented is the only case of the typical multiple neuritic type found in the literature.

Remlinger¹ gives the distribution of 243 cases as follows:

Severe paraplegia with bladder and rectal symptoms	68
Landry's ascending paralysis	39
Paresis of lower limbs with bladder retention	33
Unilateral paralysis of facial nerve	31
Paresis of lower limbs without bladder retention	21
Paralysis of facial nerve, type not stated	22
Bilateral facial nerve paralysis	5
Paralysis of facial nerve and oculomotor nerves	4
Simple paresis of the bladder	9
Miscellaneous neurotic types	11

Most of the cases occur between ten days after treatment is started and ten days after it is completed.

Various observers are not in agreement as to the pathological changes found. Getzwa et al¹³ found similarity between two fatal paralytic accidents and a spontaneous case of Landry's ascending paralysis. Bassoe and Grinker¹⁴ point out the similarity of the changes in a paralytic accident with those of a verified case of rabies. Practically all reports agree that no Negri bodies are found in fatal accidents and that no virus is present which reproduces the disorder in various animals, principally rabbits, which have been inoculated with nervous tissue from fatal cases. All observers agree that the anterior horn cells and sensory ganglion cells show cytoplasmic

and nuclear changes, engorgement of the small vessels of the cord, brain and edema of the glia. There are no typical spinal fluid findings. Disagreement exists as to degenerative changes in the myelin or axon cylinders and as to whether there is a focal increase of neuroglia with perivascular and pericellular aggregations.

Pasteur Institutes state that overexertion during the treatment seems to be a precipitating factor in the development of these paralyses. For this reason they recommend that patients should remain at rest as much as possible during antirabic treatment.

Cholecystography should always be done where the symptoms and physical findings give one the impression of an existing gall bladder disease, as it offers the best means of making a correct diagnosis. As Potter states, early diagnosis and treatment of cholecystitis and cholelithiasis in children will not only afford immediate relief, but will save these patients from possible Liver damage in adult life.

Treatment. Zelditch states that in the mild cholecystitis cases, that the majority recovered following duodenal intubation, rest and diet; only a few of the cases whose symptoms persisted needing surgical intervention. In the series of cases, I gathered from the literature, all were treated surgically either by cholecystostomy or cholecystectomy. Montgomery, makes the statement that children do not have the same power as adults to wall-off infection. Therefore, in the acute cases, it is probably wiser not to attempt conservative measures, in the hope that the acute inflammatory process will subside, but to use surgical treatment at once.

I wish to report a case of cholelithiasis in a boy nine years old, occurring in our own practice, diagnosed pre-operatively by x-ray and verified at time of operation.

Case 1. Master P.G.B., age 9 years, occupation, school boy, was first seen on June 5, 1938.

Chief Complaint: — On June 3rd, 1938, patient developed a dull aching pain in the lower mid-abdomen, was nauseated and vomited twice. Pain was of the steady dull aching type and was relieved following a bowel movement, and the use of an ice bag, applied to the abdomen. While at this patient's home, his temperature ranged from 99 to 101; had five previous attacks similar to the above. On June 5, was sent to a Decatur Hospital from a neighboring city with a diagnosis of acute appendicitis.

Family History: Mother, living and well, x-ray examination of father, 1936 revealed the presence of

gall stones; an uncle was operated upon in 1934 for empyema of the gall bladder. Otherwise, the family history is essentially negative. No familial history of tuberculosis, cancer or diabetes.

Past History: Pneumonia at the age of eighteen months. Purulent tonsillitis at the age of three. Also a tonsillectomy and adenoidectomy at the age of three. Chickenpox in 1932; measles in 1933; and whooping cough in 1934.

Present History: The mother states that the patient's first attack of abdominal pain began at the age of three years. Pain was always at or about the navel, dull aching in character which the patient described as a "stomach-ache." During this attack he had one-half to one degree rise in temperature. Nausea and vomiting were present. The pain lasted only 48 hours, and was most severe either in the morning or afternoon, — never in the evening or at night. Pain never had any relation to meals or type of food eaten. Up until 1938, patient had only one attack a year. In 1935, while at school, patient became severely ill with one of these attacks. He had two or three spells of vomiting, one of them being of the projectile type. His pain was more violent and spasmodic about the navel and his illness lasted for five days. There was a rise of temperature of two- to three degrees, and at no time was jaundice present. In 1938, patient had three attacks, one each in February, May and June. The last one was associated with three degrees rise in temperature and tenderness and pain about the navel and in the right lower quadrant. During these attacks chills, jaundice, or diarrhea were never present. The spells of pain (spasmodic) usually lasted fifteen minutes and then re-occurred. Between attacks, patient's appetite was fair to poor. He stated that he could not eat very much because of epigastric distress and fullness. One of his last attacks occurred after a meal of creamed salmon and baked potatoes.

Physical Examination: The nose and throat examination was essentially negative except for some increase in the lymphatic tissue. The blood pressure was systolic 102, diastolic 64. Examination of the chest was negative. Abdominal examination revealed no liver or splenic enlargement, and there was no marked tenderness in any portion of the abdomen. No muscle rigidity or spasm. Extremities normal. Urinalysis was negative. The blood examination showed hemoglobin to be 13.1 gm%. Erythrocytes 4,150,000. Leucocytes 5,900. Polymorphonuclear leucocytes 70, lymphocytes 22, monocytes 7, and basophiles 1%. Kahn Test was negative. The test meal showed a total acidity of 36, free hydrochloric acid 24, and quantity 110 c.c.

Due to the character of the pain, its unusual location at or about the umbilicus, its apparent onset caused by the eating canned salmon and baked potatoes, the low white count, with a normal leucocyte count, we felt that his attacks would have to be explained on some other basis than that of acute appendicitis. As a consequence he was given food

tests which were entirely negative. X-ray of the gastrointestinal tract was negative, as was the stasis x-ray. These x-rays, however, showed seven concretions to the right of the 2nd lumbar vertebra, being grouped in such a manner as to strongly suggest that they were in the gall bladder. Cholecystography showed a poorly functioning gall bladder with multiple stones. On this basis, we felt that operation was definitely indicated, and the parents were so advised.

He entered the hospital on July 18, 1938, and was operated on July 19, 1938, at which time a cholecystectomy and appendectomy were performed. The pathological report was as follows: "The gall bladder 6 x 2 cm. opened. Wall is thin. Mucosa smooth, greenish brown in color. There are seven small stones faceted. Dark brown and friable throughout. Appendix 5 cm. long and of medium width. Wall normal thickness."

Microscopic Examination of the Gall Bladder: "Mucosa is almost entirely infiltrated with lymphocytes just below the epithelium. The other coats are hyperemic. Diagnosis: chronic cholecystitis and cholelithiasis."

This young patient remained in the hospital fifteen days, following operation, making an uneventful recovery. To date, almost two years after his cholecystectomy and appendectomy, has been in excellent health free from his recurrent attacks of abdominal pain and gastric distress.

CONCLUSIONS

In the above case, we have a history of pneumonia and acute tonsillitis, one and one-half years preceeding the onset of his first attack of abdominal pain.

In my opinion his cholecystitis and cholelithiasis were the direct result of his attack of pneumonia plus a familial predisposition, although one cannot entirely rule out his other infectious diseases as being causative agents.

Treatment in most instances would depend on circumstances. In the first two types the bladder paralysis demands special consideration, using the usual urologic procedures to prevent infection, with symptomatic treatment of the other manifestations as they arise. The use of mechanical respirators in the Landry type should help reduce its 30 per cent. mortality. Paralyzed muscles should be treated as in other paralyses with immobilization in the position of muscular neutrality. After tenderness has disappeared hydrotherapy in the form of tub or pool exercise would seem rational. In the neuritic types Vitamin B complex might be of value.

Whether antirabic treatment is to be stopped would depend upon the severity of the inflicted wounds. Extensive lacerations about the head or face by a proved rabid animal would justify one in continuing treatment, as these cases are

the most liable to cause rabies; even the usual complete treatment has been known to fail in preventing the disease with such wounds. Less extensive wounds elsewhere, especially if through clothing might justify discontinuance, especially if a Landry type of paralysis developed. It is not known whether continued treatment makes these paralyses any worse once they have appeared. As most cases occur in the latter part of treatment or after it is completed, this usually offers no problem.

CASE REPORT. — Seven members of a family whose dog had just died of rabies were given a course of 14 doses of a phenol killed (Semple) rabies vaccine. Their ages ranged from 2½ years to 30 years. Six days following the last injection and six days before admission a nine year old girl began to walk with a flaillike motion of her left leg. This became progressively worse until both legs were similarly affected and walking was very difficult. Two days before admission it was noticed that her hands were exceedingly weak, and such things as piano playing were almost impossible. This patient's previous history was negative except for measles and scarlet fever which had uneventful courses.

Physical examination was negative except for the neurological findings (made by Dr. Harry Paskind) which showed: Symmetrical weakness at ankle joints and steppage gait; symmetrical weakness and clumsiness in the hands.

There was marked weakness in dorsiflexion of feet and toes and of hands and fingers. The little fingers could not be placed in a four or five fingered cone. Muscle strength in the extremities was otherwise negative.

Touch, pain, and vibratory stimuli were normal; except over the hands and feet these agents produced a paresthesia. The hands and feet were hyperesthetic to rubbing. The ankle reflexes were absent; patellar reflexes were present, moderately brisk, equal on both sides. Biceps reflexes were absent; other arm reflexes were moderately brisk and equal on both sides. Plantar stimulation produced no response. Abdominal reflexes were normal. Results of examination of cranial nerves were negative.

Bladder and rectal control normal.

Temperature, pulse and respiration normal.

Laboratory examination showed normal blood and urine.

Spinal fluid gave negative Pandy and Ross Jones. No growth on culture. Slight blood contamination made cell count useless. Throat cultures negative.

Diagnosis: Multiple neuritis due to rabies inoculation.

Treatment and course: The hands, arms, feet and legs were put up in the position of muscular neutrality using moulded posterior splints. Physiotherapy, including light massage and water baths, was apparently of considerable aid. 320 international units of

vitamin B were given daily. Under this program patient made a complete recovery in six weeks.

A case of multiple neuritis due to rabies vaccination has been presented. The subject of paralytic accidents due to antirabic treatment has been presented. The Semple or other killed vaccines seem to be safer from the standpoint of the incidence of accidents following their use. Treatment in cases when they occur has been suggested. Because of these accidents discrimination and close watch of the patient should be used during and after antirabic vaccination. Again it is emphasized that these accidents should not influence withholding antirabic vaccination when this is indicated.

REFERENCES

1. P. Remlinger: Reports to the International Rabies Conference, League of Nations, C. H. 531 (1) April, 1927.
2. A. G. McKendrick: Bulletin of the Health Organization League of Nations, 7: No. 1, 1938.
3. H. M. Smith: Experience with Rabies and Its Preventive Treatment, South. Med. Jour. 25: 876, 1932.
4. G. W. McCoy: Anti-rabic Vaccine Paralysis, Pub. Health Reports 45: 188, 1930.
5. F. Young: Peripheral Nerve Paralysis Following Use of Various Serums, J. Am. Med. Assoc. 98: 1139, 1932.
6. Foster Kennedy: Certain Nerve Complications Following the Use of Therapeutic and Prophylactic Sera, Am. J. Med. Sc. 177: 555, 1929.
7. G. Wilson and S. B. Hadden: Neuritis and Multiple Neuritis Following Serum Therapy, J.A.M.A. 98: 123, 1932.
8. F. C. Hodges: Unfavorable Reactions Due to Antirabic Treatment Am. Jour. Clin. Path. 5: 211, 1935.
9. Hans Zinsser and Stanhope Bayne-Jones: A Textbook Bacteriology, 7th Edition, D. Appleton-Century Co. 1935.
10. W. W. C. Topley and G. S. Wilson: Principles of Bacteriology and Immunity, 2nd. Ed. Wm. Wood and Co. 1936.
11. Year Book of General Medicine 100, 1938.
12. S. Getzowa, G. Stuart and K. S. Krikorian: Pathological Changes Observed in Paralysis of the Landry Type, Jour. of Path. and Bact. 37: 483, 1937.
13. P. Bassoe and R. Grinker: Human Rabies and Rabies Vaccine Encephalomyelitis, Arch. Neurol. and Psychiatry No. 23, 1138, 1930.
14. W. W. Park and A. W. Williams: Pathogenic Microorganisms, 10th Edition, Lea and Febiger, 1933.

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CONTRIBUTION OF THE LABORATORY TO THE TREATMENT OF HEMORRHAGE

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Although more than 1,000 papers were published on the coagulation of blood from 1900 to 1933, no significant contribution was made either in the prevention or the cure of the commonly

recognized hemorrhagic diseases. In 1934 several important but unrelated studies yielded results which in the course of only five years led to the solution of a number of important bleeding diseases. In that year Dam and Schönheyder¹ came to the conclusion that the hemorrhagic disease which was produced in chicks by means of a synthetic diet was due to the absence of a new food accessory substance, which the senior investigator named vitamin K. In the same year Quick² developed a simple and practical method for the quantitative determination of prothrombin and with Stanley-Brown and Bancroft³ observed that the prothrombin was normal in hemophilia but often reduced in jaundice. Their work established the fact that the bleeding in jaundice is due to a deficiency of prothrombin. Work on vitamin K was continued by Dam and his associates⁴ and in the following year they showed that the new vitamin was distributed widely in green plants, and that it was fat soluble. Independently, Almquist and Stockstad,⁵ who were pursuing the same problem found that alfalfa was an especially rich source of vitamin K and that as little as 0.5 per cent. in the diet could prevent the hemorrhagic disease in chicks. At this time Almquist also began his studies on the isolation and the chemical nature of vitamin K.

In 1936 Quick⁶ studied quantitatively the prothrombin of chicks suffering from vitamin K deficiency. He found that the prothrombin was markedly reduced, thus confirming Schönheyder's⁷ qualitative observation that the prothrombin was low in vitamin K deficient chicks. He further found that bleeding occurred when the prothrombin was reduced below 10 per cent. and that by incorporating one per cent, alfalfa meal in the diet, the prothrombin was elevated to 40 per cent. while two per cent, alfalfa restored the level to normal. By correlating his earlier findings of prothrombinopenia in jaundice with the latter results, Quick came to the conclusion that the bleeding in biliary obstruction was due perhaps to an inadequate absorption of vitamin K brought about by the absence of bile salts in the intestines. He recommended therefore as the treatment for cholemic bleeding that vitamin K in the form of alfalfa or an extract of the latter be administered together with an adequate amount of bile acids. In less than two years after this suggestion was made, it was verified clini-

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cally by Warner, Brinkhous and Smith,⁸ Butt, Snell and Osterberg,⁹ and Dam and Glavind.¹⁰

It was soon recognized that in the jaundiced patient, poor absorption of vitamin K was not however the only factor but that impaired liver function was also a contributory cause of hypoprothrombinemia. Smith, Warner and Brinkhous¹¹ as early as 1934 reported a marked reduction of the prothrombin in dogs poisoned with chloroform. Similar findings were reported by Quick.¹² It seemed logical therefore to conclude that the most probable reason for the poor response of certain patients to vitamin K therapy was accounted for by poor hepatic function. Warner¹³ furthermore established that prothrombinopenia resulted after partial hepatectomy, thus showing that the liver played an important role in the utilization of vitamin K for the syntheses of prothrombin.

With the acceptance of these concepts, the clinician made rapid progress in the treatment and prevention of the bleeding in jaundice. Recent developments have therefore been almost solely devoted to the isolation and synthesis of vitamin K. Of greatest importance has been the discovery that relatively simple naphthoquinone derivatives, particularly 2 methyl 1-4 naphthoquinone, have a vitamin K activity as great as the natural product.^{14, 15}

Significantly, vitamin K deficiency cannot be produced with any degree of success in adult mammals. In view of the fact that bacteria readily produce vitamin K as Almquist¹⁶ first reported, it seems certain that a considerable portion of the required vitamin K as obtained from the bacterial products formed in the intestines. It is even questionable whether the adult with a normally functioning biliary system requires any vitamin K in his food. Quite different however is the situation in the newborn infant. Although the prothrombin is normal at birth, it often falls to an exceedingly low level during the first few days of life.¹⁷ This temporary period of prothrombin depletion in the newborn is a pure vitamin K deficiency state, which is cured as soon as the baby receives vitamin K. It is very likely that the establishment of a bacterial flora is responsible for the first vitamin K available to the infant.

Since the prothrombin is often low during the first few days of life, the infant passes through a critical period. Any trivial bleeding can, by

further reducing the prothrombin of the blood, precipitate a serious hemorrhagic condition. Since vitamin K is a specific cure¹⁸ the indications for its use are clear. It should be given promptly whenever any signs of oozing or bleeding appear, and should be administered prior to any surgical procedure however simple that has to be done before the infant is one week old. It is hoped that vitamin K will reduce the incidence of intracranial hemorrhage, and it seems advisable to administer it to the baby whenever the delivery has been difficult. Perhaps the most satisfactory solution of the problem will be to give the mother vitamin K shortly before delivery occurs. Hellman and Shettles¹⁹ reported that they were able to increase the prothrombin in infants by giving vitamin K to the mother. Similar results have been obtained by Sage.²⁰

The discovery of vitamin K and the availability of a simple test for determining prothrombin made it possible to find the cause, the cure, and the prevention of these baffling hemorrhagic diseases in less than half a decade. But more than this, it has stimulated a renewed interest in the whole problem of coagulation and has lent encouragement to the possibility that hemophilia and other bleeding conditions will ultimately be conquered.

The brief chronological review of the recent advances in the control of the hypoprothrombinemic types of hemorrhage clearly emphasizes the logical sequence with which the solution of the problem was brought about. Only after laboratory studies had paved the way, was it possible for the clinician to handle effectively the bleeding in jaundice and in the newborn. Temporarily, progress is again stopped, for vitamin K has not offered any help in hemophilia, purpura, and the sundry other types of hemorrhagic diseases. Success in curing these clinical entities can only be achieved, barring lucky and accidental discoveries, by again having the starting point in the laboratory.

It might be well to look back to 1934 before attacking the new problems and to review the premises on which much of the present concepts concerning prothrombin are based. Instead of blindly following the complex theories with which the subject of coagulation was bogged down, the simple hypothesis most clearly enunciated by Morawitz and Wöhlisch was accepted as a working guide. According to this theory the

clotting proceeds in the following two steps:

Prothrombin + thromboplastin + calcium = thrombin
Fibrinogen + thrombin = fibrin (clot)

Since it is well known that the coagulation time is proportional to the concentration of thrombin, it seemed logical to assume that it is also proportional to the concentration of prothrombin provided that the other two components of the reaction, i.e., calcium and thromboplastin can be made constants. The latter was accomplished with surprising ease. By mixing the freshly drawn blood with a fixed quantity of sodium oxalate and recalcifying with a calculated amount of calcium chloride, the calcium was made a constant in the equation. For making the thromboplastin a constant, the simple expedience of adding an excess of this reagent accomplished the desired goal. With a fixed amount of calcium and an excess of thromboplastin, the clotting time thus becomes a direct measure of the prothrombin concentration, and the value of the clotting time in terms of per cent of prothrombin can be best presented in the form of a curve (chart 1).

Much fundamental information can be obtained from studying the chart. It can be seen that the relation of prothrombin to the clotting time is not a straight line proportion. It follows therefore that clotting indices obtained by dividing the clotting time of the unknown plasma by that of the normal plasma such as proposed by Owen, Hoffman, Ziffren and Smith²¹ are basically erroneous. The true relationship of the clotting time to the concentration of prothrombin is represented by a hyperbolic curve which can be mathematically expressed by the equation

$$c.t. = a + \frac{k}{c}$$

c.t. = clotting time. c = concentration of prothrombin. a and k = constants)

The values of the constants have been found. For human plasma, they are:

$$a = 8.7 \quad k = 302$$

From the shape of the curve one learns that the clotting time changes relatively little until the prothrombin is reduced to about 20 per cent. The range therefore between 20 and 100 per cent, is the margin of safety. It is easy to understand why even a severe hemorrhage does not endanger a normal individual whereas slight bleeding in a jaundiced patient or in a newborn child may precipitate an attack of uncontrolled bleeding. If the margin of safety is exhausted,

any loss of blood will further deplete the prothrombin and carry the patient into the hemorrhagic zone. Fortunately the same response holds for the opposite picture. If the concentration of prothrombin is in the bleeding zone, a transfusion may just be sufficient to throw the prothrombin concentration into the safety range. Thus if a patient has a prothrombin of 12 per cent, a transfusion of 500 cc. of normal blood would theoretically elevate the prothrombin to about 20 per cent, and thereby immensely aid as a temporary means of stopping hemorrhage. In the past many patients were tided over critical periods of hypoprothrombinemia by repeated transfusions of blood as was illustrated by the patient described by Quick.¹² Fortunately, since the advent of vitamin K, this is rarely necessary.

The major part of the prothrombin deficiency problem has been solved, but relatively little has thus far been accomplished in other hemorrhagic diseases. Hemophilia offers a real challenge. It is certain that the prothrombin in this disease is normal. Likewise the calcium and the fibrinogen are unaltered, and no abnormal amount of antithrombin can be found. The defect unquestionably is in the thromboplastin. In fact if a drop of thromboplastin is added to hemophilic blood, coagulation occurs as rapidly as in human blood. Much evidence is in favor of the view that in this disease the platelets are unduly stable and therefore liberate their thromboplastin too slowly to bring about normal coagulation. Ordinarily, if 1 cc. of blood is put into a small test tube, coagulation occurs in five to eight minutes. Since one drop of thromboplastin added to freshly drawn blood brings about clotting in 12 seconds, one can deduce that the liberation of thromboplastin from the platelets is exceedingly slow even in normal blood. It is easy to see how a relatively slight change in the stability of the platelet may greatly alter the clotting time. It must be emphasized that normally the thromboplastin is the determinant of the coagulation rate. It is safe to predict that when as much is known about thromboplastin as is about prothrombin another group of hemorrhagic diseases will be under control.

SUMMARY

A historical review of vitamin K in the treatment of hypoprothrombinemic types of hemorrhagic diseases is presented.

The basic factors underlying the quantitative determination of prothrombin are discussed.
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BIBLIOGRAPHY

1. Dam, H. and Schönheyder F.: *Biochem. J.* 28: 1355, 1934.
2. Quick, A. J.: *J. Biol. Chem.* 109: lxxiii 1935.
3. Quick, A. J.: Stanley-Brown, M., and Bancroft, F. W.: *Am. J. Med. Sci.* 190: 501, 1935.
4. Dam, H.: *Biochem. J.* 29: 1273, 1935; Dam, H., and Schönheyder F.: *Biochem. J.* 30: 897, 1936.
5. Almquist H. J., and Stockstad, E. L. R.: *J. Biol. Chem.* 111: 105, 1935.
6. Quick, A. J.: *Am. J. Physiol.* 118: 260, 1937.
7. Dam, H.: Schönheyder, F., and Tage-Hansen, C.: *Biochem. J.* 30: 1075, 1936.
8. Warner, E. D.: Brinkhous, K. M., and Smith, H. P.: *Proc. Soc. Exper. Biol. and Med.* 37: 628, 1938.
9. Butt, H. R.: Suell, A. M., and Osterberg, A. E.: *Proc. Staff Meetings Mayo Clinic* 13: 74, 1938.
10. Dam, H., and Glavind, J.: *Acta Med. Scand.* 96: 108, 1938.
11. Smith, H. P.: Warner, E. D., and Brinkhous, K. M.: *Arch. Path.* 18: 558, 1934.
12. Quick, A. J.: *J. Am. Med. Assn.* 110: 1658, 1938.
13. Warner, E. D.: *J. Exper. Med.* 68: 831, 1938.
14. Almquist, H. J., and Klose, A. A.: *J. Am. Chem. Soc.* 61: 1611, 1939.
15. Ansbacher, S., and Fernholz, E.: *J. Am. Chem. Soc.* 61: 1924, 1939.
16. Almquist, H. J., and Stockstad, E. L. R.: *J. Nutrit.* 12: 329, 1936.
17. Quick, A. J., and Grossman, A. M.: *Am. J. Med. Sci.* 199: 1, 1940.
18. Waddell, W. W.: Guerry, Dup.: Bray, W. E., and Kelley, O. R.: *Proc. Soc. Exper. Biol. and Med.* 40: 432, 1939.
19. Hellman, L. M., and Shettles, L. B.: *Bull. John Hopkins Hosp.* 65: 138, 1939.
20. Sage, E. C. Personal communication.
21. Owen, C. A.; Hoffman, G. R.; Ziffren, S. E., and Smith, H. P.: *Proc. Soc. Exper. Biol. and Med.* 41: 181, 1939.

THE VALUE OF ROUTINE SEROLOGICAL TESTS FOR SYPHILIS

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The title of this paper "The Value of Routine Serological Tests" may perhaps mean different things to different persons. To some it may perhaps mean the diagnostic importance of doing routine tests either from the point of view of the recent Government campaign against syphilis or from the point of view of a general health measure. To others this subject might mean the importance of routine tests from the therapeutic point of view. Still others might interpret this to mean the comparative value of different sero-

logical tests. And finally this title could be interpreted as meaning how much importance should be attached to the unexpected positive tests discovered in the course of routine work.

From the point of view of the Government campaign against syphilis it would certainly be of great value to have routine tests done on all hospital patients. I have the feeling that the medical profession should initiate this move voluntarily. If it is not done we may soon be required to do it by law. Already state statute requires the routine test in obstetrical cases and for the marriage certificate. If we wait until we are required to do routine tests on all hospital patients I feel we will be well along the road to state medicine.

This danger of state medicine has become a challenge to the profession. Organized medicine must be able to meet this challenge. A free medical profession has made its greatest advances in this country because it has worked as an organized group. The greatest improvement ever made was the correction of the faults of the medical schools and this was done by voluntary cooperation under the aegis of the American Medical Association.

The general profession must again make up its mind to a program of voluntary cooperation. This consists of two parts. The first part is concerned with routine tests. The practicing physician must insist on routine serological tests for syphilis in his practice, and especially in his hospital practice. This is best done in this or hospital laboratories under the direction of a competent pathologist when the patient can afford to pay for the test. I have never personally had any difficulty, but I have been informed by other physicians that the large, free laboratories available to run serology tests may occasionally have a mix-up in reports due perhaps to handling so many tests at one time. From all points of view the practices of sending tests to free laboratories when the patient can afford to pay cannot be condemned too highly. It may sound trite to say so, but I feel that this habit is a big push on the road to state medicine.

Secondly, there must be improvement in therapeutics. While a detailed discussion of the treatment of syphilis is outside the scope of this paper I might perhaps say a word in this regard.

Doctors, as a rule, want treatment in their own hands; apparently, however, the profession has

not been able to follow patients as they should be. Russell¹ in a recent article in the *Journal of the American Medical Association* points out that almost 100% of the early cases receive adequate treatment in Copenhagen, whereas only 5% receive adequate treatment in the United States. If his figures are correct this is a shocking statement.

As far as the value of having routine tests done on hospital patients, I do not have to remind you that this is a measure for the patients' good. First of all considerable embarrassment is avoided. Before routine tests were in effect at the Hospital of Saint Anthony de Padua it frequently happened that a doctor did not request serological tests for syphilis because of timidity or fear of offending the patient. Now the matter is handled as a routine procedure and I doubt if as many as one out of five hundred patients object to having the blood drawn.

Everyone knows in a general way that many unsuspected positives will be discovered if tests are made routine. I was very much surprised, however, to find that Russell¹ states that in industrial practice only six one hundredth of one per cent. are found positive when tests are made only on the suspicion of syphilis; whereas 4.4% are found positive when the serology is done as a routine matter. At the Hospital of Saint Anthony de Padua routine serological tests for all patients have been in effect for only a little over a year. Previous to that, however, the tests were done routinely on obstetrical cases. In the year before routine tests went into effect the laboratory performed 1960 Kahns. In the year since then the laboratory performed 4093 Kahn tests. Sixty-four tests were positive in the first year, 112 in the second. The percentage of positives was 3.3 for the former year and 2.7 for the latter year. This drop in percentage is, of course, to be expected due to the fact that all major cases have serological tests performed on them. This last percentage, 2.7, is somewhat lower than the figure that Russell¹ quotes; it may perhaps be explained on the basis of dealing with a different group of patients. The routine tests were put in effect at our hospital largely at the insistence of one of the attending physicians. In the year that the routine tests have been in effect he has had 112 patients who have been so examined and he has been rewarded by

discovering four patients who had unexpected positive tests.

I would next like to make a few remarks in regard to the comparative value of the different serological tests. As everyone knows a great number of different tests have been devised to determine the presence of syphilis by serological methods. A few years ago a conference was held under the auspices of the American Society of Clinical Pathologists to determine which tests were the most valuable. Practically all the tests were found to be good but three of them were found to be most reliable. These are the standard Kahn test, the diagnostic Kline test, and the quantitative Kolmer-Wassermann test. The technique for the Kahn and Kline tests is well standardized and quite uniform. A report of a positive Kahn or Kline test from different laboratories means exactly the same thing provided adequate care has been used in performing the test. When a report of a Wassermann test is given it should be necessary to state exactly what technique is used because one can almost say that techniques for performing Wassermann tests vary with each individual laboratory. The six-tube or quantitative Kolmer-Wassermann test is perhaps the best technique to use. Next to this is the two-tube Kolmer-Wassermann. If one follows Kolmer's technique it is necessary to use over-night icebox incubation. In some places, however, a four-hour icebox incubation has been satisfactorily substituted. In either case the use of the icebox delays the final report and many physicians are too impatient to wait until the next day. For this reason many laboratories still stick to the half-hour incubator incubation. It would certainly be advantageous if all laboratories would adopt the same exact Wassermann technique, preferably the Kolmer-Wassermann and report it by the double name.

Some places perform Wassermanns only on those sera which are found to have a positive Kahn test. This is entirely satisfactory for large laboratories, but would hardly do for the average hospital laboratory. Taking our hospital as an example, only eleven Wassermann tests would be run a month and this number is so few that it would be hard to keep the technique uniform. A uniform technique can certainly be obtained if a fair number of tests are done each day, for example, 36 a day, as in our hospital for the last year.

Of course, tests repeated at intervals are necessary during treatment for syphilis. I have heard it said that the Wassermann remains positive longer than the Kahn test. But this has not been our experience.

One of the most interesting angles to the performance of routine tests is concerned with the unexpected positive test. As everyone knows false positives do occasionally occur with every technique and even if more than one technique is used. It has often been stated that pregnancy may produce a slight positive, although this has not been our experience. We have had it happen that a slightly positive Kahn test may occur in a patient who is just recovering from a general anesthetic. At times infectious mononucleosis will produce a positive Kahn test. Various infections of other sorts are reputed to produce false positives, but I have had none come to my attention recently with one possible exception. In the past year one patient with lobar pneumonia had a strongly positive Kahn and Wassermann test. None of the other forty odd patients with lobar pneumonia had a positive finding, and I am inclined to feel that this was not a false positive test.

At this point I would like to mention briefly four cases which are interesting and are illustrative of the value of performing routine tests.

Case 1: A 25-year-old white woman entered the hospital for an appendectomy. Both Kahn and Wassermann tests were strongly positive, much to the surprise of the attending physician who had delivered her several years before. He investigated her history, however, and obtained an admission that she had been promiscuous as a girl and had had an illegitimate child at the age of 16.

Case 2: A 47-year-old white woman was found to have a positive Kahn at the time of the delivery. Her attending physician insisted that there must be some mistake because she had a negative test at a previous delivery three years before. Her husband and her previous child were found to be negative. The attending physician did discover, however, that her brother from another town had visited her about five months before this last delivery. The entire family had remarked at that time that the brother had many open sores on his skin. This brother and the patient were very affectionate and loving, and had even used one another's tooth brushes.

Case 3: A 34-year-old white man entered the hospital for an appendectomy. The routine Kahn was strongly positive and his Wassermann was equally positive. He had been married for a number

of years and had one child. His wife and the child were serologically negative. The attending physician insisted that there must be some mistake in the result since he had known him for many years and had considered him a very fine person, and the physician insisted that we repeat the test four or five times and had us checked by outside laboratories before he would even consider mentioning the positive test to the patient. When he did talk to the patient he discovered that the patient had had gonorrhea as a boy, although he denied having had a chancre. A supposition is, of course, that he acquired syphilis at the time of the gonorrhea. After nearly a year of treatment this patient's tests are still positive.

Case 4: A 22-year-old white woman was sent into the laboratory to have a routine marriage test performed. The Kahn and Wassermann were both strongly positive. Because of the surprise of the attending physician who claimed he knew the family and the patient well, we repeated the test before he would report its result and also had it checked in another laboratory. A marriage certificate, of course, could not be issued and the prospective bridegroom was informed of the positive test. His serology had been negative. Despite a warning of the physician the bridegroom consented to eloping to a neighboring state where the couple was married.

The attending physician was finally informed by the family, much to his surprise, that the patient had previously been married and divorced and had had a child by her first husband. The divorce was obtained because her husband had been unfaithful. While this fact may not seem adequate proof of possible infection of the patient, subsequent events provided another turn.

Since the recent marriage the patient's second husband has acquired a penile chancre. He is now separated from the patient, and probably will request a divorce on this account. Incidentally, a careful examination of the patient has revealed no open lesions suspicious of syphilis on the internal or external genitalia.

SUMMARY: In summary let me say that both from the diagnostic and therapeutic point of view the general profession must take to the idea of routine serological tests, especially in its hospital practice; otherwise the steps already taken by state law may lead toward state medicine.

Figures have been presented to show the great advantage of routine tests from a diagnostic point of view and also to show how far this country is behind other places in the point of adequate therapy.

The most reliable serological tests are the Kahn test, the Kline test, and the Kolmer-

Wassermann test with icebox incubation. There are many other excellent tests, however, but these three appear to have a slight edge in accuracy.

From all points of view routine serological tests are best handled in small private laboratories or in hospital laboratories under the guidance of a competent pathologist. The practice of sending tests to a free, public laboratory when the patient could afford to pay is a pernicious one and cannot be condemned too highly.

Lastly, four cases have been presented in which routine serological tests disclosed positives, much to the surprise of the attending physician in each case. Investigation of these cases disclosed that the positive tests were almost certainly due to a previously acquired syphilis.

REFERENCE

1. Russell, A. E. "Syphilis Case Finding in Industry." *J. A. M. A.* 114:1321, 1940.

DISCUSSION

Dr. I. Davidsohn, Chicago: This is a very timely subject as everyone of you knows, and Dr. Levine has presented a very convincing array of arguments in favor of the routine performance of serological tests for syphilis. There was a time when there were great differences of opinion as to whether serologic tests for syphilis should be a routine procedure in the hospital. By routine is meant, that every patient who comes to the hospital should have the test performed without regard to his clinical condition or indications, just as routine urinalyses and blood counts are done. I think the best argument in favor of such an attitude is the admission by most syphilologists that no matter how competent they may be, they will not diagnose more than between 60 and 80 per cent. of definite, subsequently proven cases of syphilis. There always remain between 20 and 40 per cent. of cases admitted by syphilologists that cannot be diagnosed without serologic tests. That in itself is the best argument in favor of the absolute need for the routine performance of this test. However, as I look over my experience with serologic tests for syphilis I find that, as in any other development, there are some drawbacks which have to be considered and kept in mind with regard to the routine performance of tests. That is what I wish to discuss today because the other side of the subject was so well presented by Dr. Levine.

I have noticed in some institutions where I have worked, in which the test for syphilis was performed, that a certain disregard for the occasional positive test developed. Too often it was said that the presence of syphilis does not mean that the particular lesion is always syphilitic. That is true and as I shall show later, the disregard of this precaution may

lead to trouble. Some time ago we had a patient with a tumor in the mediastinum. The roentgenologic diagnosis was a neoplasm probably originating from the lymph nodes. At that time the routine laboratory test reported the presence of a 4+ Kolmer complement fixation test and strongly positive Kahn and Kline tests. With those findings, the clinician as well as the radiologist agreed that the clinical and roentgenologic findings should be accepted without regard to the serologic reports, because the roentgenologic findings were against an aneurysm of the aorta. The patient died in due course, and I found an aneurysm in the aorta involving the arch.

In other cases that I saw the clinicians did not regard a positive test for syphilis as of great importance, particularly when the test was weakly positive. In other words, there is a tendency to disregard the so-called weakly positive test. Many times you have heard the remark "plus one or plus two does not mean very much." Dr. Kolmer has told me many times that as far as syphilis is concerned, the weakly positive test should be considered just as important as the strongly positive test. That seems to be very difficult to put across.

Just as there is some danger, due to the routine performance, of disregarding the test, so there is also danger of attaching too quickly importance to the positive test. Not so many months ago a young man was seen in a Chicago hospital with an infectious mononucleosis which was diagnosed by the serologic test and blood smear. The laboratory reported a positive Wassermann. The clinician, without further ado, put the patient on syphilitic treatment. The young man developed a dangerous reaction. He had no syphilis but a falsely positive test in the course of mononucleosis. Laboratory men should emphasize that one positive test should not be an indication for treatment unless it is confirmed.

That brings us to the question of whether a positive serologic test in the absence of clinical findings should be at any time an indication for treatment. That is up to the clinician to decide. In such cases I have always recommended serologic examination of the spinal fluid because falsely positive in the spinal fluid are much rarer than in the blood.

Finally one type of test is certainly not as satisfactory as the performance of several tests. I think those who are not using the complement fixation test are not giving their patients the full advantage. The performance of several tests will help to eliminate some falsely positive and some falsely negative reactions which cannot be eliminated in any other way.

Dr. Victor Levine, Chicago (closing): I just want to say that the general practising physicians must understand that the decision as to whether or not the patient needs treatment and the decision as to the importance of a positive or negative test rest entirely with them. I can only second everything Dr. Davidsohn said in that regard.

THE PLATFORM OF THE AMERICAN MEDICAL ASSOCIATION

The American Medical Association advocates:

1. The establishment of an agency of federal government under which shall be coordinated and administered all medical and health functions of the federal government exclusive of those of the Army and Navy.
2. The allotment of such funds as the Congress may make available to any state in actual need for the prevention of disease, the promotion of health and the care of the sick on proof of such need.
3. The principle that the care of the public health and the provision of medical service to the sick is primarily a local responsibility.
4. The development of a mechanism for meeting the needs of expansion of preventive medical services with local determination of needs and local control of administration.
5. The extension of medical care for the indigent and the medically indigent with local determination of needs and local control of administration.
6. In the extension of medical services to all the people, the utmost utilization of qualified medical and hospital facilities already established.
7. The continued development of the private practice of medicine, subject to such changes as may be necessary to maintain the quality of medical services and to increase their availability.
8. Expansion of public health and medical services consistent with the American system of democracy.

News of the State

John Soukup spoke before the Staff of the South Chicago Community Hospital on February 28th. Subject, "Management of the Retained Placenta."

H. P. Saunders gave a talk on Socialized Medicine before the North End Woman's Club Chicago on March 3rd.

Carroll Birch gave a talk on Hemophilia before the Alumni of the South Shore Hospital on March 4th.

Carolyn N. MacDonald addressed a public meeting in Champaign on March 6th.

George M. Lucas gave a talk on "What People Believe About Health" before the Stewart Ridge Woman's Club, Chicago on March 6th.

Eli Rubens addressed the Mothers Club of the Bryn Mawr Community Church, March 10th on the subject "The Allergic Child."

G. Hellmuth spoke to the Fernwood School Association, Chicago on "Health Problems" on March 11th.

Milton Miller spoke on "Mental Health in a Changing World" before the Woodlawn Woman's Club, Chicago on March 11th.

C. J. Barborka addressed the Linn County Medical Society, Thursday, March 13, Cedar Rapids, Iowa. The title of his address was "Nutritional and Sub-Clinical States of Deficiency Diseases."

C. J. Barborka addressed the Dallas Southern Clinical Society, Dallas, Texas, March 17. He gave three addresses titled "Diet in Medical Practice," "Sub-clinical States of Deficiency Diseases," and "Management of Obesity."

Paul A. Teschner addressed the Chicago West Town Auxiliary to the Railway Mail Association Woman's Club, Maywood, Illinois, on March 14, 1941 at 2:00 P.M. "Your Health Tomorrow" was the subject of Dr. Teschner's talk.

Maurice A. Schiller addressed the James G. Blain Parent Teachers Association on March 14th. The subject was "Mental Hygiene of Adolescence."

Eugene B. Perry addressed the Kershaw Parent Teacher Association on March 13th on the subject, "The Illinois Marriage Law and What It Means."

Virginia Benson was invited to talk on "Understanding Our Children" before the Parent Teacher Association of the Waller High School, Chicago on March 17.

Leon Unger addressed the Woodshore Woman's Club, Chicago, on the subject of "Allergy," March 18th.

H. L. Jaffe was invited to give a talk on "Cancer" before the Woman's Guild on the Bethany Home, Chicago, on March 18.

Mary G. Schroeder gave a talk on "Mental Health in a Changing World" before the Young Married Peoples Club of the Rogers Park Presbyterian Church, Chicago, March 18.

Louis W. Schultz read a paper before the First District Dental and Medical Societies, New York City, March 19 on "Treatment of Traumatic Temporomandibular Arthritis."

Matthew Lewison delivered an illustrated lecture on "The Theory and Significance of Electrocardiography in Childhood." Cook County Hospital, March 21.

Harry Leichenger addressed the DeWitt County Medical Society on March 21, subject "Poliomyelitis."

N. D. Fabricant addressed the Parent Teacher Association of the Garfield School, Chicago, on March 27th.

Wayne W. Fox addressed the Winnebago County Medical Society on March 28th, subject "Pneumonia."

Edward Buckman was invited to give a talk on "Sex Hygiene" before the Division Street Y.M.C.A., Chicago, on March 31st.

The Institute of Medicine of Chicago announces that the Joseph A. Capps Prize of \$400 for 1940 has been awarded to David N. Danforth, Northwestern University Medical School 1939, for his investigation on "The Anatomy of Labor as Revealed by Frozen Sagittal Sections of the Macacus Rhesus Monkey and of Man."

Frederick W. Merrifield addressed a joint meeting of the Warren County Medical and Dental Societies on March 31st at Monmouth.

Paul C. Bucy addressed a meeting in Kansas City on March 21st. Subject, "The Relationship of the Temporal Lobes to Primate Behavior."

Winfield Tuberculosis Sanatorium, Winfield, Illinois, is constructing a new building which will provide complete facilities for fifty patients. The new development will contain complete X-ray equipment, a surgery, research laboratory, and dietary and recreational departments.

Francis E. Senear addressed the Morgan Park Woman's Club, March 31st, on "The Skin and Cosmetics."

Louis N. Katz, Director of Cardiovascular Research, Michael Reese Hospital, attended the dedication of The Harold Brunn Institute for Cardiovascular Research, at the Mt. Zion Hospital, San Francisco. At this time he delivered three principal addresses on "The Role of the Normal Kidney in Experimental Hypertension," "The Electrocardiogram in Coronary Disease" and "Clinical Research in Non-University Hospitals."

Frederick W. Slobe will address the Marshall County Medical Society at Marshalltown, Iowa, on April 1st on the subject "General Considerations of Traumatic Surgery."

Coming Meetings

April 8 — Rock Island County Medical Society, Moline City Hospital, Moline, Illinois — 8:00 P. M. — Dr. Frederick H. Falls — "Obstetrical Operations."

April 8 — Bureau County Medical Society — Perry Memorial Hospital, Princeton — 6:30 P. M. — Dinner — Pneumonia Program.

April 8 — Mercer County Medical Society — Aledo, Illinois — 6:30 P. M. Dinner — Dr. George J. Musgrave — "Ear, Nose and Throat Conditions."

April 8 — Tazewell County Medical Society — Illinois Hotel, Pekin, Illinois — 6:15 P. M. — Dinner — Dr. Jerome J. Sievers — "Poliomyelitis."

April 9 — 11th District Post Graduate Conference — Joliet, Illinois — Registration 11:00 A. M. — Louis Joliet Hotel — Luncheon — 12:00 Noon — Dr. Italo F. Volini — "Sulfanilamide and Its Relatives." Dr. Harry W. Woodruff — "Diseases of the Eye." Dr. Edward Allen — "Toxemias of Pregnancy." Robert S. Berghoff, M. D. — Heart Clinic with Angelo S. Geraci assisting. Evening program at 7:45. Drs. Manuel E. Lichtenstein and Karl A. Meyer — Symposium on "Surgery of the Large Bowel."

April 10 — Effingham County Medical Society — District Maternal Welfare Meeting — Benwood Hotel, Effingham, Illinois — 3:00 P. M. — Movies by J. B. De Lee, M. D. — "Eclampsia." Dr. Bert I. Beverly — "The Management of Behavior Problems in Children." Dr. H. Close Hesseltine — "The Place of the New Chemotherapeutic Drugs Before, During and After Gestation." Cocktails at 5:30 Dinner at 6:30. Dr. A. L. Hoyne — "The Incidence of Contagious Diseases and More Frequent Complications."

April 11 — Will-Grundy County Medical Society — Louis Joliet Hotel, Joliet, Illinois — Luncheon — 12:00 Noon — Dr. John R. Neal.

April 11 — Jersey-Greene County Medical Society — Carrollton, Illinois — 6:30 P. M. — Dr. Wm. J. Morginson — "Diagnosis and Treatment of Common Skin Diseases."

April 15 — Maternal Welfare Meeting — Carbondale, Illinois — Roberts Hotel — 6:30 P. M. — Dr. Frederick H. Falls — "Obstetrical Problems."

April 16 — Tri-County Medical Society — Hunt's Cafe — 6:30 P. M. Dinner — Metropolis, Illinois — Dr. Lewis T. Gregory — "Fractures."

April 18 — Will-Grundy County Medical Society — Louis Joliet Hotel, Joliet, Illinois — Luncheon — 12:00 Noon — Dr. Leo K. Campbell — "Weight Control."

April 23 — First Councilor District Post Graduate Conference — Masonic Temple, Freeport, Illinois — Luncheon — 12:30 P. M. There will be six speakers in the afternoon including Dr. C. C. Maher — "Etiological Diagnosis of Heart Disease;" Dr. Geza de Takats — "Management of Peripheral Vascular Disease;" Dr. Eric Oldberg, "Head Injuries;" Dr. C. E. Galloway — "Management of Abortion," and two speakers in the evening. Dinner will be served at 6:00 P. M.

April 24 — Edgar County Medical Society — Paris Hospital, Paris, Illinois — 7:00 P. M. — Dr. C. A. Aldrich — "Treatment of Nephritis in Childhood."

- April 24 — Franklin County Medical Society — Benton Community House — 8:00 P. M. Benton, Illinois — Dr. Roy W. Harrell — "Poliomyelitis."
- April 24 — Fourth District Post Graduate Conference — Galesburg, Illinois Galesburg Club — 1:00 P. M. — Dr. Robert S. Berghoff — "Heart Disease" Dr. L. C. Gatewood — "Gastro-intestinal Diseases." There will also be speakers on "Fractures from a General Practitioner's Viewpoint" and "Office Gynecology."
- Dinner will be served at 6:00 P. M.
- May 2 — Madison County Medical Society — Alton, Illinois — 2:00 P. M. — Dr. H. W. Elghammer — "Rheumatic Heart Disease in Children."
- May 7 — Coles-Cumberland County Medical Society — U. S. Grant Hotel, Mattoon, Illinois — Dinner 6:00 P. M. — Dr. Charles N. Pease — "Orthopaedic Problems in Children" — Dr. Carlo Scuderi — "General Fractures."
- May 9 — Jersey-Greene County Medical Society — Jerseyville or Carrollton, Illinois — 6:30 P. M. — Dr. Justin Cordonnier — "Medical Treatment of the Commoner Urinary Tract Infections."
- May 13 — Effingham County Medical Society — Benwood Hotel, Effingham, Illinois — Dinner 6:30 P. M. — Dr. R. A. Tearnan — "Fractures."
- May 13 — Knox County Medical Society — Maternal Welfare Meeting — Galesburg — Dr. C. A. Aldrich — "Habits Belong to Children" — Dr. Ralph Reis — "The Development of Desirable Habits in Children. Afternoon and Evening Meeting."
- May 15 — Lee County Medical Society — Nachusa Hotel, Dixon, Illinois — Dinner 6:30 P. M. — Dr. Harry Mock — "Skull Fractures."

Deaths

JOHN C. ASH, La Harpe, Ill.; Rush Medical College, Chicago, 1899; aged 72; died, Dec. 29, 1940, of arteriosclerosis and nephritis.

JAMES THOMAS BREAKEY, Bonfield, Ill.; Jenner Medical College, Chicago, 1908; Chicago College of Medicine and Surgery, 1910; aged 64; died, Dec. 16, 1940.

REUBEN C. BROPHY, Elgin, Ill.; Bennett College of Eclectic Medicine and Surgery, Chicago, 1895; also a dentist; aged 85; died, Dec. 22, 1940, of an injury to the left leg and anemia.

DR. GEORGE T. CASS, a practicing physician and surgeon for nearly thirty years in Danville, Ill., died, March 12, 1941 at St. Elizabeth, where he had been a patient only three days. His death was due to pneumonia.

A resident of Vermilion County practically all his life, he was born November 3, 1871 on a farm, just a few miles east of Danville. He attended the local public schools and then at the age of 17 graduated with a B.S. degree at Valparaiso University at Valparaiso, Ind. and a year later with an A.B. degree at the same University. He taught school for several years in both Vermilion County and Charleston, Ark.

He took up his medical studies in the Chicago College of Medicine and Surgery, graduating in 1907. After graduating, he served on the faculty of that college and the Chicago College of Dentistry for two years. He began his practice in the city of Danville in 1911.

Dr. Cass was active in the county medical society as well as community health work. He served as City Health Officer for two years at which time he was active in establishing a Tuberculosis Clinic. He was secretary of the Vermilion County Medical Society for a number years and later president. He was a member of the Illinois State Medical Society, the American Medical Association and the Aesculapian Society of the Wabash Valley in which he was vice-president last year. At the time of death he was chief examiner of Selective Service Board No. 2 of Vermilion County.

Dr. Cass is survived by his widow, Bennis Gordon Cass, a son — Gordon Cass, Terre Haute, Indiana and a daughter Mrs. John D. Prather, Rossville, Illinois.

EDWARD JAMES DEVINE, Chicago; Chicago College of Medicine and Surgery, 1909; served during the World War; on the staff of the Evangelical Hospital; aged 61; died, January 16, of coronary occlusion.

ERLE FRANKLIN FISHER, Chicago; Bennett Medical College, Chicago, 1912; served during the World War; on the associate staff of the Alexian Brothers' Hospital; aged 57; died, January 5, at his home in Fox River Grove of coronary thrombosis.

ELMER HOLMES FLINN, Chicago; Bennett College of Eclectic Medicine and Surgery, Chicago, 1905; assistant clinical professor of medicine, Loyola University School of Medicine; on the staff of St. Elizabeth's Hospital; aged 61; died, January 25.

WILLIAM H. GRATTAN, Galatia, Ill.; St. Louis College of Physicians and Surgeons, 1897; aged 68; died in January of pneumonia.

JOSEPH ANSLEY GUSTAFSON, Orion, Ill.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1901; aged 67; on the staff of the Lutheran Hospital, Moline, where he died, Dec. 24, 1940, of coronary thrombosis.

HORACE A. HADLEY, Chicago; Chicago Physio-Medical Institute, 1889; aged 75; died, January 25, of coronary heart disease.

GEORGE H. HUNT, Paris, Ill.; Pulte Medical College, Cincinnati, 1882; member of the Illinois State Medical Society; on the staff of the Paris Hospital; aged 81; died, January 8, of hemiplegia and uremia.

GEORGE NYE HISKEY, Chicago; University of Illinois College of Medicine, Chicago, 1914; aged 51; died, January 12, of coronary thrombosis and arteriosclerosis.

ISAAC HOWE HOLLOWAY, Chicago; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1911; aged 55; died, January 4, of coronary thrombosis and arteriosclerosis.

HILLEL T. IRVING, Chicago; Northwestern University Medical School, Chicago, 1913; aged 52; died, Dec. 12, 1940, in Miami Beach, Fla., of cerebral thrombosis.

OLA ADOLPHUS KIBLER, Chicago; St. Louis College of Physicians and Surgeons, 1906; member of the Illinois State Medical Society; for many years on the staff of the Chicago State Hospital; aged 59; died, Dec. 15, 1940.

WILLIAM RUDOLPH MECHTENBERG, Morrison, Ill.; University of Nebraska College of Medicine, Omaha, 1929; member of the Illinois State Medical Society; aged 43; died, January 1, in Maquoketa, Iowa, of injuries received in an automobile accident.

HOWARD LEE METCALF, Springfield, Ill.; Rush Medical College, Chicago, 1904; past president of the Sangamon County Medical Society; on the staffs of St. John's Hospital and the Springfield Hospital; aged 64; died, Dec. 15, 1940, of coronary sclerosis.

DR. A. MERRILL MILLER, one of eastern Illinois' best known surgeons, died quite suddenly, after a few hours illness, March 19th, 1941 at Lake View Hospital Danville, Ill. His death was due to cerebral hemorrhage.

Dr. Miller, was born November 16, 1876 in Ford County near Piper City, Illinois. After his graduation from the Piper City High School, he went to Wheaton College, then Lake Forrest College for a year each. Later he entered Northwestern University Medical College, from which he graduated in 1901. He served an internship at Michael Reese Hospital in Chicago for two years which gave him a good back ground for his future work.

After completing his intern service he located at Danville and entered into general practice but surgery had always held his chief interest and in 1915 he went to Harvard Medical School for one year in post-graduate work in surgery. He returned to Danville from Harvard and was the first doctor to limit his practice to Surgery.

Dr. Miller always took an active part in medical societies, served as president of the Vermilion County Medical Society. He was a member of the Illinois State Medical Society, the American Medical Association, the Aesculapian Society of the Wabash Valley and a charter member of the Am. College of Surgeons. He was a life trustee of the Interstate Post-Graduate Medical Society and gave much time to the activities of this group. He was chief surgeon of the U. S. Veterans' Facility, located at Danville, Ill., and on the staffs of Lake View and St. Elizabeth Hospitals.

Dr. Miller was united in marriage to Jeanette Penwell, February 20, 1907 in Danville. Mrs. Miller and two children, Merrill Penwell Miller, Jacksonville, Ill. Mrs. Janet Miller Stipp, Danville with a grand child Linda Mae Miller survive.

ROBERT JAMES MILLER, Chicago; National Medical University, Chicago, 1906; aged 57; died, January 31, of lobar pneumonia and influenza.

WILLIAM MILLER, Chicago; Northwestern University Medical School, Chicago, 1911; in 1914 clinical assistant in medicine, in 1918 instructor in surgery and from 1921 to 1929 associate in surgery at his alma mater; fellow of the American College of Surgeons;

served during the World War; aged 56; on the staff of the Wesley Memorial Hospital, where he died, February 22, of coronary thrombosis.

JAMES D. MILLIGAN, San Jose, Ill.; Marion-Sims College of Medicine, St. Louis, 1898; aged 62; was found dead in bed, Dec. 5, 1940, of cerebral hemorrhage.

ROBERT WILSON MORRIS, Chicago; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1902; aged 64; on the staff of the Illinois Central Hospital, where he died, January 13, of hypertensive heart disease.

GEORGE HENRY MOSER, Arcola, Ill.; Homeopathic Medical College of Missouri, St. Louis, 1890; aged 81; died in January.

LEONARD NIESS, Trenton, Ill.; Washington University School of Medicine, St. Louis, 1912; aged 62; died, January 19, of angina pectoris.

NEWELL PATTERSON, East St. Louis, Ill.; Medical College of Ohio, Cincinnati, 1870; Civil War veteran; aged 102; died, Dec. 30, 1940, of pneumonia.

G. M. PHELPS, Kankakee, Ill.; College of Physicians and Surgeons of Chicago, 1885; aged 82, died, Dec. 27, 1940, in the Cottage Hospital, West Plains, Mo., of coronary sclerosis.

JOSEPH THOMAS UBOLD RENAUD, Chicago; University of Louisville (Ky.) Medical Department, 1905; aged 64; died, January 18, of coronary occlusion.

HENRY REED SEARLE, Rockford, Ill.; State University of Iowa College of Medicine, Iowa City, 1925; fellow of the American College of Surgeons; member of the board of directors and past president of the Winnebago County Tuberculosis Association; served during the World War; aged 41; president of the staff of the Rockford Hospital, where he died, January 21, of carcinoma of the colon.

M. VERNON SNYDER, Chicago; Chicago College of Medicine and Surgery, 1912; member of the Illinois State Medical Society; aged 53; died, January 1, at Evanston, Ill., of coronary thrombosis.

JOHN CLAIR THOMPSON, Decatur, Ill.; Chicago College of Medicine and Surgery, 1916; served during the World War; aged 49; died, January 6, of dissecting aneurysm of the aorta and hypertension.

HOMER S. WARREN SR., Chicago; College of Physicians and Surgeons of Chicago, 1889; member of the Illinois State Medical Society; in 1916 was commissioned a first lieutenant in the medical reserve corps of the United States Army; founder of the National Pathological Laboratories; for many years on the staff of the Cook County Hospital; aged 75; died, January 18, in the Veterans Administration Facility, Hines, Ill., of arteriosclerosis and heart disease.

EDWARD HENRY WEIS, Chicago; University of Illinois College of Medicine, Chicago, 1935; aged 43; died in January of carcinoma of the submaxillary gland.

D. PETER WIENS, Peoria, Ill.; Kansas City (Mo.) Homeopathic Medical College, 1896; served during the World War; member of the Radiological Society of North America; aged 73; died, January 4, of paralysis agitans.

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BIO

SELECTIVE SERVICE REJECTIONS

Rejection of one-third of the men applying for army service in the New York area is remediable by medical care only to a small extent, according to the January issue of the *New York State Journal of Medicine*, official organ of more than 17,000 physicians of the state.

"The defects for which men are being rejected by the army examiners," *The Journal* says, "are those structural and psychologic weaknesses upon which the strenuous nature of field training could be expected to have a detrimental effect.

"The point of view of the army and of civilian medical examiners might be expected to vary considerably concerning the acceptability of certain risks and thus to account for the high percentage of rejections. They should not be taken too seriously even by constitutional pessimists. And, after all, what can be done for flat feet, bow legs, and perforated eardrums?"

Unfitness for medical service is not necessarily an index of health, according to *The Journal*, though "some of our socialists acquaintances start right away to yell louder for state medicine."—Medical Society of the State of New York.

AIRPLANE AMBULANCES

Modern warfare has impressed upon everyone the importance of morale. To us, it seems that this, even more than guns and man power, enables a nation of

people to carry on determinedly in the preservation of its traditional way of life. No program for preparedness can afford to neglect the most minute detail that will aid in bolstering morale.

A wounded soldier is not the most cheerful of men. Yet this present war has shown that the airplane ambulance, with its rapid and comfortable transportation, has afforded great mental solace not only to the wounded but to the men still fighting, since they feel that every possible aid is being made available for the man in the ranks. The stretchers upon which the patients lie are easily reached from the center aisle. Pain due to transportation is almost completely eliminated since there is practically no jarring. Furthermore, the space provided is more than ample to accommodate a good supply of sedatives, cardiac stimulants, dressings, splints, and even rubber bed pans for those with spinal injuries. It is also possible to install heating devices so as to lessen the susceptibility of the wounded to the infection of the upper part of the respiratory tract.

These advantages, among others, of the airplane ambulance have been emphasized by F. Schmidt. Perfection of this method of evacuation has as yet not been achieved, since the uncertainty of suitable take-off and landing fields causes a waste of time in loading and unloading. This, however, can be overcome. To a disabled soldier some 400 miles from home, there is nothing more heartening than to know that he can be home in less than 3 hours.—*New York State Journal of Medicine*.



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FOR A SECRETARY OF HEALTH

A bill to establish a Department of Health at the head of which is to be a Secretary of Health, long advocated by the American Medical Association, has been introduced by Representative Pfeifer of New York. The secretary, according to this bill, must be a "member of the medical profession." If the bill is enacted, the Food and Drug Administration, the Bureau of Census, the Division of Vital Statistics, the Freedmen's Hospital and St. Elizabeth's Hospital, the Children's Bureau, all functions of the United States Public Health Service, the Bureau of Narcotics and the Health Department of the District of Columbia would be transferred to this department; also the whole or any part of any bureau, service or other agency of government primarily engaged in fostering or promoting health and sanitation.

From Minnesota Medicine — March, 1941.

The rapid decline in tuberculosis mortality rates has been due mainly to lessening in the incidence of infection. Among those infected, the toll though diminished, is still appalling. Mortality statistics, morbidity reports, autopsy examinations, tuberculin tests and X-ray surveys, indicate that about half of all infected individuals develop clinical tuberculosis, and that from 10 to 20 per cent of them eventually die of the disease. The high risk of disease and death due to infection by the tubercle bacillus justifies increased efforts for its prevention.—Emil Bogen, M.D., Amer. Rev. of Tuber., August, 1940.

SUPPRESSING LACTATION

The male sex hormone, testosterone propionate, was employed to suppress postpartum lactation in a selected but representative group of 77 mothers.

Breast symptoms, both subjective and objective (if slight complaints are ignored), were prevented in a large percentage of patients where the administration of testosterone was begun early and was employed as a prophylactic measure. A high percentage of patients already lactating responded promptly to the application of testosterone.

Forty-eight hours postpartum was found to be the average optimum time for initiating therapy in this indication, though an occasional case would seem to demand earlier medication for effective suppression of secretion and prevention of untoward symptoms.

An average dose of 87 mg. per patient was found to have optimum milk inhibiting activity, though dosage schedules were naturally varied to meet individual requirements.

No undesirable after effects of testosterone medication were noted in any of our cases.—Alfred M. Hellman, M.D. and Leonard F. Ciner, M.D., New York City; N.Y.S. Jour. of Med., Vol. 41, No. 1, January 1, 1941.

BRITISH "CURE" FOR NAZIS

British physicians are giving captured Nazis a dose of their own medicine, according to the English magazine *Aeroplane*. The "cure" originated, the periodical states, when an especially arrogant German pilot was brought into a base hospital. Although badly shot, he persisted in telling the staff what he thought of English medical science.

The doctors said nothing. They stiched and dressed his wounds; gave him a blood transfusion. Then, when he was comfortably settled in bed, they told him: "Now, my lad, you have two pints of good Jewish blood in you. We hope it will improve your manners." This time it was his turn to be silent.



HISTAMINE FOR NEUROVASCULAR HEADACHE

Reid gave small repeated subcutaneous doses of histamine to 5 patients with neurovascular type of headache. One patient experienced only partial relief, while the other 4 obtained complete relief. Each patient, after the possibility of an intracranial pathologic lesion was excluded and the patient reacted positively to an intradermal test injection of histamine, was given graduated doses of histamine in the following manner: The solution used consisted of 1 mg. of histamine dissolved in 10 cc. of physiologic solution of sodium chloride. On the first and second days 0.05 mg. of histamine (0.5 cc. of the solution) was injected subcutaneously twice a day; on the third and fourth days, 0.075 mg. (0.75 cc. of the solution). Thereafter, up to the end of the third week, 0.1 mg. (1 cc. of the solution) was given twice a day. When this course was finished, each patient was given one injection of 0.1 mg. of histamine once a week. If the patient remained free from symptoms during the next two or three months, an attempt was made to decrease the dose by spacing the injections. If the symptoms recurred after the dose was diminished, the injections were again increased to one a week. The author applies the term "neurovascular headache" because there is fairly conclusive proof that the aura and pain in many complaints of head pain are due to a disturbance of the neurovascular mechanism controlling cer-

tain intracranial and extracranial blood vessels. Of the various patterns of this group, migraine is perhaps the best known. There are several other patterns which have a neurovascular mechanism, and some of these are as common as the classic migraine. It is emphasized that the use of histamine must not be regarded as a cure-all for every type of headache. Each case must be thoroughly investigated and only when all possibility of a pathologic lesion has been excluded should a neurovascular mechanism be considered.

BAD CONNOTATION

"I wish the boys wouldn't call me Big Bill."
"Why?"

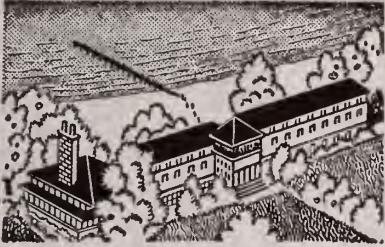
"These college names stick. And I'm studying to be a doctor."

BARE TRUTH

Girls when they went for a swim,
Once dressed like Mother Hubbard;
Now they have a different whim
And dress more like her cupboard.

—Analyst

He who courts and does not wed
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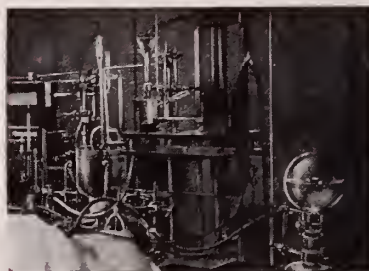


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Book Reviews

CLINICAL PELLAGRA. By Seale Harris, M. D. Assisted by Seale Harris, Jr., M. D. with foreword by E. V. McCollum, Ph. D. Illustrated. St. Louis. The C. V. Mosby Company. 1941. Price \$7.00

The author states in his preface that he has endeavored to write a factual treatise on Pellagra, in which the various phases of the subject are discussed, including summaries of the most important contribution by those who may be regarded as authorities on the subject.

DISEASES OF THE DIGESTIVE SYSTEM. Edited by Sidney A. Portis, M. D. Illustratd. With 176 engravings. Philadelphia. Lea & Febiger. 1941. Price \$10.00.

This book presents a broader knowledge of the entire field of gastroenterology than is obtainable elsewhere. Many topics are covered for the first time in a work of this character. They include the gastrointestinal manifestations of organic neurologic disease, of endocrine disease and of diabetes, gout and arthritis. The contributions on the history of gastrointestinal diseases, on the anatomy and on the normal and abnormal physiology lay the foundations for a clear understanding of the diseases of the digestive system. The general practitioner will find this book not only a useful reference work but invaluable for its clinical pictures and diagnoses of diseases for its therapeutic approach to the problems that he meets in his every-day practice.

THE THERAPY OF THE NEUROSES AND PSYCHOSES. By Samuel Henry Kraines, M. D. Philadelphia. Lea & Febiger. 1941. Price \$5.50.

This work has been written to aid the physician, who has not specialized in psychiatry, in dealing with his psychoneurotic patients. It covers the principles of treatment the practicality of which is demonstrated by references to over two hundred cases from the author's own experience. These cases are all of the usual type of patient that fills the average physician's office. After a socio-psych-biologic analysis followed by a resynthesis, the author demonstrates that many such cases can be greatly improved or cured by the procedures which he has here described.

This is an eminently practical book designed to give specific aid for specific neurotic symptoms. An excellent index facilitates the location of the various symptoms and of their treatment. This book will be of inestimable value to every physician, for all physicians, whatever their specialty, are confronted with the problem of treating the neurotic patient.

THE MEDICAL CLINICS OF NORTH AMERICA. November. 1940. Volume 24 No. 6 Philadelphia Number. Philadelphia and London. W. B. Saunders Company.

THE MEDICAL CLINICS OF NORTH AMERICA. January 1941. Volume 25. No. 1 Chicago Number. Philadelphia & London. W. B. Saunders Company.

PLAGUE ON US. By Geddes Smith. New York. The Commonwealth Fund. 1941. Price \$3.00.

This graphic account of the struggle of mankind

through twenty centuries to understand and forestall pestilence sums up what is known and points out how much is still unknown about epidemic disease.

ELECTROCARDIOGRAPHY IN PRACTICES. By Ashton Graybiel, M. D., Instructor in Medicine, Courses for Graduates, Harvard Medical School; Research Associate, Fatigue Laboratory, Harvard University; Assistant in Medicine, Massachusetts General Hospital; and Paul D. White, M. D.; Lecturer in Medicine, Harvard Medical School; Physician, Massachusetts General Hospital, in charge of the Cardiac Clinics and Laboratory. 319 pages with 272 illustrations. Philadelphia and London: W. B. Saunders Company, 1941. Cloth, \$6.00.

The authors state in their preface that the electrocardiography in this book have been assembled as the result of the need made apparent through their teaching experience. The electrocardiograms have been carefully selected to illustrate not only the various cardiac arrhythmias, but what is more important, the characteristic findings in the different etiologic types of heart disease.

BIOLOGICAL ASPECTS OF INFECTIOUS DISEASE. By F. M. Burnet, M. D. New York. The MacMillan Company. 1940. Price \$3.75.

Infectious disease, in this book, is seen as part of the balance of life, where existence of one form of life depends upon the existence of others. The organisms of disease live upon the life of man and other animals, so that the solution to be looked for, from the point of view of Nature, is an equilibrium.

AN INTRODUCTION TO DERMATOLOGY. By Richard L. Sutton, M. D. and Richard L. Sutton, Jr. M. D. with 723 illustrations. Fourth Edition. St. Louis. The C. V. Mosby Company. 1941. Price \$9.00.

This book, intended for students, collegiate and post-graduate, contains a review of dermatology sufficient to outline the scope of the specialty beyond provincial boundaries. It contains considerable more than a student may encompass, but he can always read less of it.

A number of illustrations have been trebled. The type has been reset, the work has been brought strictly up-to-date.

MACLEOD'S PHYSIOLOGY IN MODERN MEDICINE. Edited by Philip Bard with many collaborators. Ninth Edition. St. Louis. The C. V. Mosby Company. 1941. Price \$10.00.

The same contributors who were responsible for the eighth edition co-operated in bringing out this ninth edition. The work has been brought up-to-date and is a credit to the contributors.

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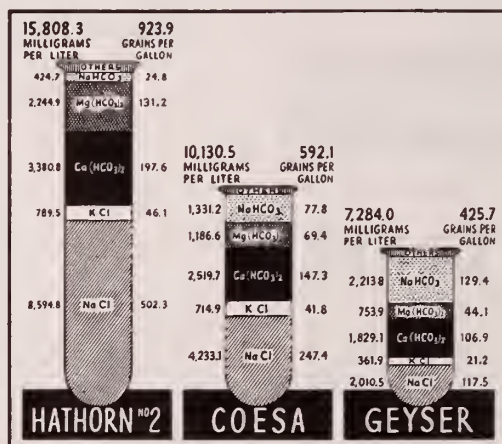
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JOURNAL OF THE INDIANA STATE MEDICAL ASS'N., MARCH 1941

When, oh when, will the American people learn to "break down" the costs of so-called medical care? That phrase, "medical care," continues to arise and smite us on every occasion; unfortunate indeed was the choice of such a title for that well-known committee that made an extensive study of the matter several years ago. In Michigan last year the matter was made somewhat of a political issue, a certain group using the grossest sort of indigent sickness as a basis for the claim that medical men were getting rich from their services in such cases. However, it now develops that the actual financial return to the medical profession of the state amounted to 2.6 cents of each dollar expended in such services. The hospital took something over 75 per cent of the money and it is presumed that the remainder went for drugs and other supplies. Let's stop talking about the costs of "medical

care"; let's make it clear that the cost of illness is not dependent upon the medical fees which usually are but a minor part of the costs of sickness.

MEDICAL RACKETS

Medical rackets, ranging from the one wherein persons representing themselves as Federal agents seek to obtain "excess supplies" or other supplies of narcotics from doctors and particularly the relatives of deceased doctors to the familiar ones pertaining to the collection of doctors accounts, are heard of from time to time. Word has come from Colorado that a medical racketeer is presently working in that state. The person represents himself as a buyer of second-hand medical and dental equipment, reports the *Journal of Kansas Medical Society*. He proceeds to obtain the confidence of physicians and offers to buy obsolete and unused equipment. He then explains that check in payment will be issued by his company and leaves with the instruments and is not heard from again.—*From New York State Journal of Medicine, March 15, 1941.*

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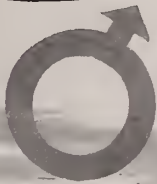


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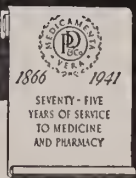
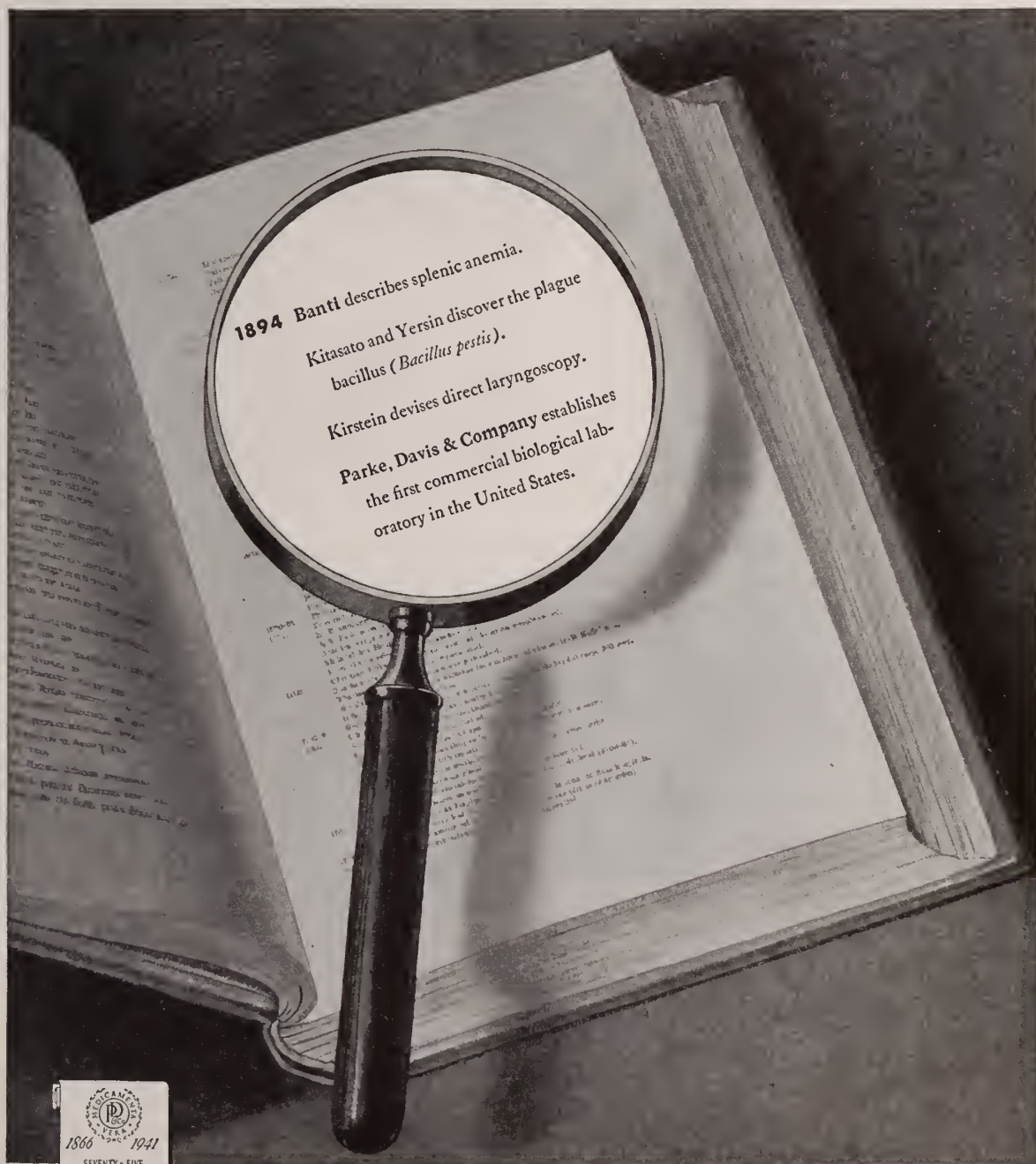
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1939. Accepted Foods and Their Nutritional Significance, Council on Foods of the American Medical Association, Chicago.

1939. Food and Life; Yearbook of Agriculture, U. S. Dept. of Agriculture, U. S. Government Printing Office, Washington, D. C.

1939. Canned Food Reference Manual, American Can Company, New York.

1938. Nutrition Abstracts and Reviews 8, 281.



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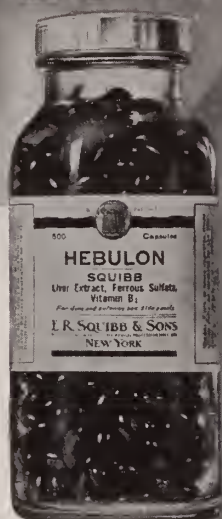
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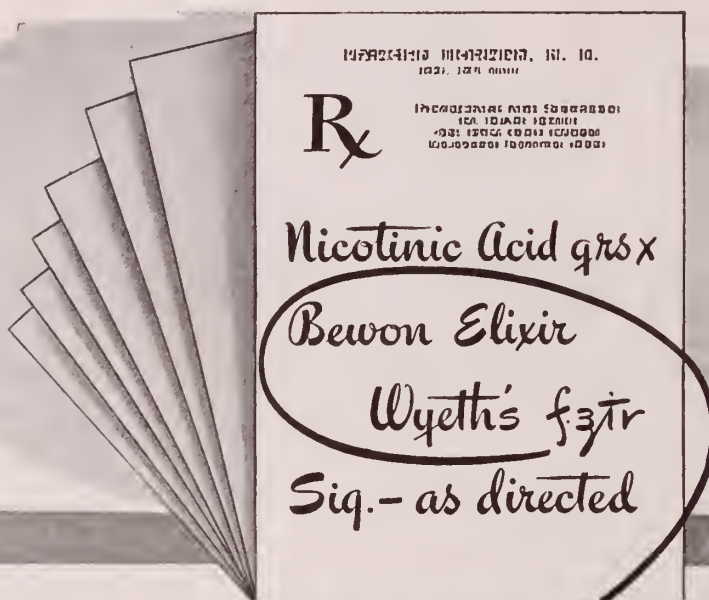


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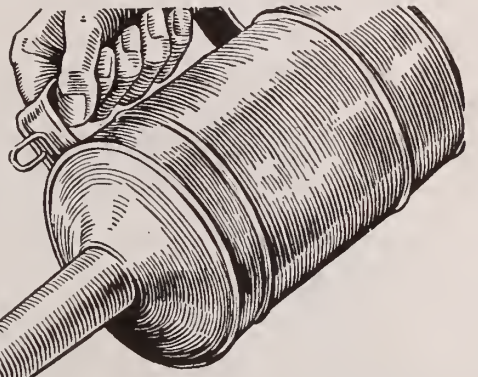
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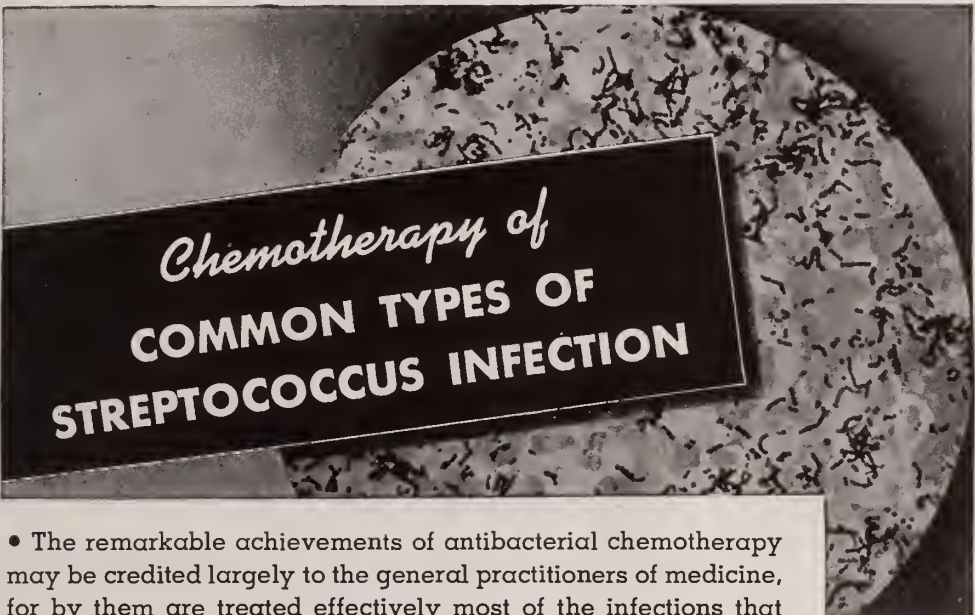
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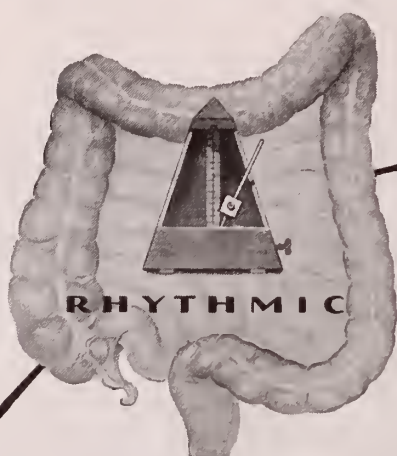
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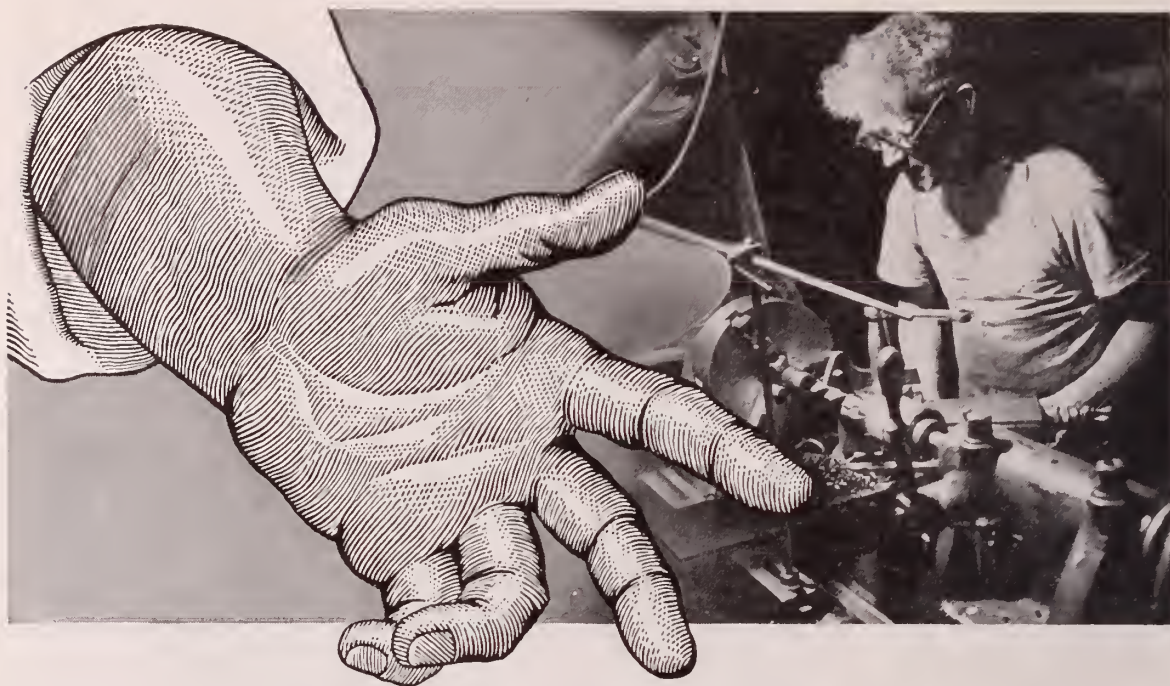
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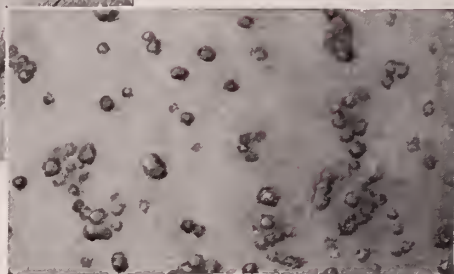


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THE ILLINOIS STATE MEDICAL SOCIETY

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*Deceased

In Memoriam

CHARLES JOSEPH WHALEN, M.D., LL.B.

Dr. Charles J. Whalen, for many years Editor of the Illinois Medical Journal, and an outstanding figure in American Medicine for a half century, died in Ravenswood Hospital, Chicago, on Monday, April 7, 1941. He was born in Fitchburg, Wisconsin in 1868, descended on both sides of his family from Revolutionary War stock. He received his early education in Wisconsin schools, graduating from Watertown University in 1887. He matriculated at Rush Medical College, Chicago, and received his degree in Medicine in 1891, then decided to practice in Chicago.

While practicing, Dr. Whalen continued his studies at Northwestern University and obtained a Bachelor of Law degree in 1897. In 1905 he was named Health Commissioner of Chicago, a position which he held for two years. He reorganized the Department making it one of the outstanding Health Departments in the country.

Early in his professional life, Dr. Whalen became interested in Medical Society activities, attending meetings regularly, and acting as member of many important committees in the Chicago Medical Society, and the Illinois State Medical Society. He served as President of the Chicago Medical Society, and in 1913, was elected President of the Illinois State Medical Society, serving in that capacity during the fiscal year, 1913-14. For nearly 25 years he served as a member of the House of Delegates of the American Medical Association and many times acted as Chairman or member of highly important committees, always doing meticulously, those duties assigned to him.

For a number of years, Dr. Whalen was Associate Professor of Medicine at Rush Medical College, and at one time was President of Bennett Medical College which later became Loyola University School of Medicine. Generally recognized as a teacher of renown, he was ever anxious



Charles Joseph Whalen, M.D., L.L.B. C

1868 -- 1941

to give every possible aid to the younger men in his profession.

During his long career in medicine, Dr. Whalen became a member of many professional societies. In addition to membership in the Chicago Medical Society, the Illinois State Medical Society, and Fellowship in the American Medical Association, he was also a member of the Chicago Laryngological and Otological Society, the American Association of Railway Surgeons, the American Public Health Association, the American Academy of Medicine, and the American Medical Editors Association, of which he was a past-president.

For many years Dr. Whalen was a member of various important committees of his State Medical Society. In June, 1919, he was elected Editor of the Illinois Medical Journal. When assuming the responsibility for editing this Journal, he found a 44 page publication, which under his management, was soon enlarged and eventually assumed its present size of 128 pages. Each issue of the Illinois Medical Journal carried editorials written carefully, and stressing some of the most important economic problems of the medical profession.

A quarter of a century ago, Dr. Whalen believed that the medical profession of America was facing the menace of "state medicine" which at that time was gradually increasing throughout Europe. He urged the profession in this country to do everything possible to show that a system of that type would not be for the best interests of our people, and would definitely lower the high standards which had been developed in the United States over a period of years. He was responsible for the introduction and ultimate passing of a resolution condemning "state medicine" by the House of Delegates of the American Medical Association in 1920.

Dr. Whalen sacrificed an incredible amount of time, energy and money in his many duties for the best interests of organized medicine, and in the consideration of plans for the safeguarding of the health interests of the people of Illinois and the nation as a whole. Many of his fearless editorials required weeks of time in preparation. Even though confined to his home during his last illness over a period of many weeks, and while suffering intense pain, he continued his writing and gave directions for the publication of his Journal which, even then, was of para-

mount importance to him.

In recent years Dr. Whalen had been doing most of his editorial work in the family home where he had fitted up a modern office and where he received encouragement and assistance from members of his family, who also were interested in his work. Mrs. Whalen, two sons and three daughters survive, and will long cherish the memories of a kind and loving husband and father.

Our beloved editor was endowed with much wisdom and courage and was indeed a man of unusual enlightenment. His efforts for the interest of medicine were not restricted by state lines, but were for the entire nation. Many of his editorials were republished in part or in their entirety by many journals throughout the country. For many years while he was endeavoring to warn this nation of encroaching dangers, many thought it was the cry of "Wolf! Wolf!". But recent developments prove unmistakably that Dr. Whalen, many years ago, could see the changing trends in this country which he believed would eventually affect the health of our people and lower the standards which medicine had been gradually building up throughout the past century.

One of his finest works was the "Epitomized Record of the Progress of Medicine During the Last Hundred Years," published in the Illinois Medical Journal of June, 1940, following the celebration of the centennial year of the Illinois State Medical Society. This article alone required many months for its preparation.

Physicians of Illinois and many throughout this country will long cherish the memory of Dr. Whalen whom they have all greeted so many times at meetings in Illinois and elsewhere. They will recall with pride that he has long been interested in promoting the best in medicine, and has invariably had in mind, the interests of both the laity and the medical profession in his many editorial comments. Our people will remember him because of his high and noble standards, his knowledge of the aims and needs of our profession, and his constant efforts to do his part in the march of medical progress. Always interested in research, and in experimental work in the laboratory to contribute further to the present day knowledge concerning disease, its cause and alleviation, his passing is not only a loss to Illinois, but to the nation.

Editorials

The two editorials which follow were written by Dr. Whalen for this issue of the Journal and were completed only a few days before his death.

AMERICA — 1960

CHARLES J. WHALEN, M.D.

What price a shrinking birthrate?

Young America of 1960, today's babe in arms, may expect to find itself faced with a staggering burden of taxation, thanks not only to mounting federal and state taxes but also to a shrinking birthrate and in increasing number of 65-year-olds whom it will be called upon to support.

"In 1850," as Roy Helton so aptly points out,¹ "in a world teeming with aggressive youth, old age was a distinction and not a problem. Today it is a problem and not a distinction." In 1850 the mature provided for their own ageing parents; today, and even more so in 1960, must they provide for ageing parents in general, because the economic means of the present generation, and the generation of 1960, are becoming, and will become, more and more inadequate to care for its own elders.

Scientific knowledge has been the means of increasing life expectancy from an approximate 35 years in 1850 to slightly over 60 years in 1930. By 1960 we may well expect to see this figure increased to 70-75 years. Control of communicable diseases and the decrease in infant mortality have been contributing factors in bringing this about.

Who is going to support our 65-year-olds? Even with a static birthrate we find that American youth would be faced with a genuine problem. In 1900, 3,080,000 persons, or 4.1 per cent of the population, were 65 or over. In 1930, 6,634,000, or 5.4 per cent, were 65 or over. By 1938 we had 8,180,000 individuals, or 6.3 per cent, 65 or over. And 40 years hence, 22,000,000, or 14 to 16 per cent, will be eligible to receive old-age pensions.

If the largest proportion of the oldsters were financially independent, youth would not have to worry. But are they? The United States

Bureau of Labor statistics show that on January 1, 1937 we had 7,816,000 persons in the United States who were 65 or over. Of this number, 2,746,000, or 35.1 per cent, were financially independent, and 5,070,000, or 64.9 per cent, were dependent.

Thus far the picture seems black enough, but let us take another look at the situation. What is happening to our birthrate? An inspection of the vital statistics of the Census Bureau of the U. S. Department of Commerce will enlighten us.

TABLE 1

Births*	Birthrates	Excess of births over deaths
1915 776,304	25.1	
1916 818,983	25.0	
1917 1,353,792	24.7	
1918 1,363,649	24.6	
1919 1,373,438	22.3	
1920 1,508,874	23.7	
1921 1,714,261	24.2	888,750
1922 1,774,911	22.3	836,366
1923 1,792,646	22.2	800,409
1924 1,930,614	22.4	923,620
1925 1,878,880	21.5	848,362
1926 1,856,068	20.7	762,557
1927 2,137,836	20.6	961,031
1928 2,233,149	19.8	871,162
1929 2,169,920	18.9	800,163
1930 2,203,958	18.9	882,591
1931 2,112,760	18.0	811,355
1932 2,074,042	17.4	780,773
1933 2,081,232	16.5	739,126
1934 2,167,636	17.1	770,733
1935 2,155,105	16.9	762,353
1936 2,144,790	16.7	665,562
1937 2,203,337	17.0	
1938 2,286,962	17.6	
1939 2,083,475**	17.5**	752,910**

*Birth registration area in Continental United States.

**Provisional figures.

Here we have a 5.6 drop in birthrate per cents during the past 25 years. Between 1921 and 1936, the period for which final figures were obtainable, the excess of births over deaths has been steadily declining from 888,750 to 665,562. The balance for 1937 was slightly more favorable, but the upward trend may be but a temporary one.

TABLE 2

Deaths*	Deathrates	Infant Mortality (Under 1 yr.)	Infant Mortality Rates
1915 909,155	13.6	148,561	99.9
1916 1,001,921	14.0	164,660	101.0
1917 1,066,711	14.3	171,024	93.8
1918 1,445,158	18.1	193,855	100.9
1919 1,096,436	12.9	161,621	86.6
1920 1,142,558	13.0	174,710	85.8
1921 1,032,009	11.6	160,011	75.6
1922 1,101,863	11.7	158,560	76.2
1923 1,193,017	12.2	166,274	76.1
1924 1,173,990	11.7	161,404	70.8
1925 1,219,019	11.8	161,961	71.7
1926 1,285,927	12.3	163,343	73.3
1927 1,236,949	11.4	147,134	64.6
1928 1,378,675	12.1	155,858	68.7

1. Helton, Roy: Old People: A Rising National Problem, Harpers 179: 449-59, 1939.

1929	1,386,363	11.9	148,886	67.6
1930	1,343,356	11.3	145,374	64.6
1931	1,322,587	11.1	132,874	61.6
1932	1,308,529	10.9	121,267	57.6
1933	1,342,106	10.7	120,887	58.1
1934	1,396,903	11.0	130,185	60.1
1935	1,392,752	10.9	120,138	55.7
1936	1,479,228	11.5	122,535	55.1
1937	1,450,427	11.2	119,931	54.4
1938	1,381,391**	10.6	116,412	
1939	1,287,278**	10.7		

*Birth registration area (Exclusive of Hawaii).

**Provisional figures.

To keep pace with the falling birthrate we have the deathrate lowered 2.9 per cent from 1915 to 1939. At the same time the infant mortality rate fell 45.5 per cent. This means that not only are many more people living to maturity, but that each year an increasingly smaller percentage of the population is dying.

If we examine the Metropolitan Life Insurance Company mortality figures of January, 1940,² we find the greatest decline in mortality occurring between the ages of 1 to 34.

TABLE 3
Deathrates per 100,000 for all causes.

Ages	1939	1929	1911	Per cent decline in 1939 since	
				1929	1911
One and over	751.0	891.9	1,253.0	15.8	40.1
1-4	233.5	609.5	1,479.1	61.7	84.2
5-9	102.7	221.8	416.2	53.7	75.3
10-14	91.2	166.6	268.0	45.3	66.0
15-19	152.1	315.7	467.8	51.8	67.5
20-24	212.3	445.1	732.5	52.3	71.0
25-34	311.2	556.9	947.7	44.1	67.2
35-44	559.1	866.8	1,367.8	35.5	59.1
45-54	1,152.1	1,555.7	1,978.3	25.9	41.8
55-64	2,461.4	3,061.5	3,596.0	19.6	31.6
65-74	5,575.6	6,505.0	7,455.0	14.3	25.2
75 and over	13,536.7	14,283.4	13,926.9	5.2	2.8

This means that a larger percentage of our population will be living to the ripe age of 65 to reap old-age benefits.

Warren S. Thompson of the Scripps Foundation of Miami University, Oxford, Ohio has made some interesting estimates.³ In 1930, persons under 20 constituted 39.2 per cent of our total population; by 1960 they will make up only 29.3 per cent, a decline of one-fourth. The group in the child-bearing ages will change but little, from 38.1 in 1930 to 37.4 per cent in 1960. The 35-44 group will increase from 13.9 to 15.4 per cent in 1960. The 20-29 group will decrease from 16.8 to 14.3 per cent during the same period. These estimates do not take into consideration a further decline in the birthrate, but are based on a continuance of the same specific birth-

rates.

In 1930 the middle-aged 45-64 group constituted 17.4 per cent of the total population — in 1960 they will make up 23.3 per cent thereof. The numerical increase in this age-group will be about three-fifths between 1930 and 1960, while the total population will increase by only one-fifth. The 65-and-over group, which in 1930 amounted to 5.4 per cent of the population, will by 1960 have become 10 per cent of the total.

J. B. O'Hara points out the actual age-shift in population as follows:⁴

TABLE 4

Census	0-19	20-64	65 up	Total
1920	43,042,978	57,589,808	5,081,914	105,714,700
1930	48,664,485	67,438,288	6,727,827	122,830,600
1935	46,696,000	73,147,000	7,496,000	127,339,000
1939	45,750,000	75,700,000	8,750,000	130,200,000

Contrast the population growth of approximately 6 per cent with the 30 per cent increase in the number of the aged and the 6 per cent decrease in the number of children. Each year the latter is decreasing by 1 per cent, the number of producers is increasing at the same rate, while the total of the aged is growing by 3.5 per cent annually.

The Metropolitan Life Insurance Company, whose actuarial figures are exceptionally accurate, gives the following percentage distribution of population for 1931.⁵

TABLE 5

TABLE 3 Percentage distribution of population — 1934.		
Age period— years	Metropolitan Industrial ¹	United States
	Total persons 100%	100%
1-74		
1-19	43.49	36.73
20-54	45.72	51.36
55-74	10.79	11.91
1-4	7.73	7.26
5-9	12.60	9.64
10-14	12.58	10.15
15-19	10.58	9.68
20-24	8.63	9.22
25-29	6.97	8.57
30-34	6.65	7.72
35-39	6.68	7.29
40-44	6.27	7.10
45-49	5.61	6.15
50-54	4.91	5.31
55-59	4.09	4.36
60-64	3.26	3.32
65-69	2.24	2.52
70-74	1.20	1.71

Actual statistics as to what has happened in the field of life expectancy among the white and colored races have been compiled by the Metropolitan actuaries.⁶

4. O'Hara, J. H.: Our Shrinking Birth-Rate Menaces Old-Age Security, America, June 15, 1940.

5. Metropolitan Life Insurance Company: Twenty-five Years of Health Progress, Home Office: New York, 1937, p. 9.

6. Ibid., p. 38.

2. Metropolitan Life Insurance Bulletin, January, 1940.

3. Thompson, Warren S.: Population Growth — Its Vital Statistics and Public Health Aspects, Am. J. Pub. Health 28: 1319-1324, Nov. 1938.

TABLE 6

Expectation of life at quinquennial ages.
White persons by sex.

Year	Age										
	10	15	20	25	30	35	40	45	50	55	60
Males											
1935	53.68	49.03	44.47	40.03	35.65	31.40	27.31	23.41	19.76	16.40	13.39
1911-12	45.61	41.12	36.87	33.00	29.36	26.03	22.94	19.92	16.98	14.14	11.50
Females											
1935	57.65	52.95	48.31	43.82	39.43	35.06	30.75	26.54	22.52	18.73	15.23
1911-12	50.66	46.19	42.02	38.21	34.47	30.72	27.00	23.29	19.67	16.32	13.20
Colored persons by sex.											
Males											
1935	46.97	42.52	38.38	34.56	30.96	27.45	24.04	20.84	17.87	15.08	12.49
1911-12	41.32	37.42	34.16	31.11	27.95	24.90	21.91	18.93	16.09	13.48	11.21
Females											
1935	49.38	44.89	40.95	37.26	33.54	29.85	26.27	22.86	19.63	16.63	13.84
1911-12	41.30	37.83	35.14	32.39	29.32	26.30	23.25	20.25	17.34	14.60	12.20

From the foregoing facts it is plain that the dilemma of caring for our aged will become increasingly perplexing, reaching its most acute stage in 1960. Two obvious remedies present themselves: an increased birthrate, or an increase in immigration.

But as Roy Helton points out,⁷ no change of trend in the birthrate can affect this condition for 20 or 30 years. Nor would large-scale immigration at the present time improve the situation, for a high percentage of the newcomers to our shores are between the ages of 20 and 55. But this is just the age group in which we now have an abnormal surplus. The next three decades would have to see a corresponding rise in the birthrate to care for the additional burden imposed by ageing immigrants.

By 1950 or 1955 a balance of labor and opportunity may occur. If our birthrate does not rise by that time, we may need immigrants again, because 1960 will see the maturity of our present abnormally small population below age 15, which at that date will have an abnormally large ageing population to provide for.

What means of caring for this group have we provided? Old-Age Security! Let us take a look at its workings to see just how heavy a financial burden will fall on the young working man or woman of the future.

In 1939, sensational changes were made in the Social Security amendments. According to the original plan, annuities paid under the old-age

insurance provisions applied only to the insured individuals, who in 1939 totalled 30,154,024. Under the 1939 amendments, the coverage was widened to include aged widows, dependents and orphans. Moreover, monthly benefits in the early years were augmented.

At the age of 65, a man with a wife aged 65 or more will get an extra 50 per cent annuity for her. Even if he dies before reaching 65, his widow, if or when she is 65, will receive during her lifetime three-fourths of the annuity to which he would have been entitled. Until the age of 16, or 18 if attending school, each of his surviving children will receive 50 per cent of his annuity. In case there are no other heirs, his parents each get 50 per cent of his annuity, provided they are dependent and over 65.

Congress, confronted with a rising population of 65 or over, was asked to find funds to broaden the pension list without raising the tax ante. The revision of the Social Security Act of 1935 put into effect the pay-as-you-go system of disbursing benefits from a reserve fund in the United States Treasury, which in 1939 amounted to \$3,000,000,000. The costs of pensions are to be met as nearly as possible out of current receipts, approximately one-third of which are obtained from employers, one-third from employees, and one-third from the government out of general taxes. At the same time it was recommended that the taxes be placed in a contingency reserve fund and not commingled with the general U. S. Treasury revenues.

An examination of the following table will give an excellent idea as to what Mr. Average Ameri-

7. Helton, Roy: Old People: A rising National Problem, Harpers 179: 449-59, 1939.

can may expect under the new monthly benefit rates.

TABLE 7

Benefits for persons whose wages average \$150 per month.			
Years covered	Old rates	New rates	
		Single	Married
3	None	\$30.90	\$46.35
5	\$20.00	31.50	47.25
10	27.50	33.00	49.50
20	42.50	36.00	54.00
30	53.75	39.00	58.50
40	61.25	42.00	63.00

It would seem obvious that the young American of today and of 1960 must be prepared to face a severe strain on his purse, thanks to the social problem presented by a decreasing birth-rate and increased longevity.

Certainly these older members of our population can and will contribute much that is fine and useful to our civilization, and the present generation realizes this. What we need is more young Americans to care for more old Americans! How will we get more young Americans? By an increased birthrate.

THE CURE OF MALIGNANCY

CHARLES J. WHALEN, M.D.

An enormous mass of contradictory evidence and radically different opinions relating to cancer has been gathered by scientific investigators for years. Inasmuch as the field of medicine is of such vast dimensions that no human mind is capable of integrating and understanding more than a fraction of the knowledge found in this field, perhaps a modicum of doubt and skepticism, or even bewilderment, could be found in the minds of all medical men who endeavor to place each bit of evidence about cancer in its proper niche and then evaluate discoveries and conclusions. All civilized countries are aroused and conscious of the significance and seriousness of the cancer problem. All can point with pride to earnest and tireless workers, some of whom devote their lives to searching for answers that will solve the mysteries of malignancy. There has been phenomenal activity in all branches of research. Campaigns for the control of cancer, leagues, cancer research funds, cancer councils and congresses, special clinics and hospitals, cancer exhibits, state and international commissions, and elaborate and painstaking efforts to educate everyone in the country in matters relating to cancer, are some of the activities which medical men and the public are now earnestly engaged in.

If the morbidity and mortality rates of cancer are increasing from year to year all of these efforts to forestall this destructive agent appear imperative. We are informed that about half a million persons have some form of cancer in the United States at the present time, and that ten per cent. of all deaths in this country are caused by this disease. Some countries find their death incidence mounting rapidly, and hospitals of most countries report annually increasing numbers of patients affected by the disease. In a few countries it appears that a slight decrease in the death rate has been noted. Many observers assert that wealth or social position have little to do with the level of cancer mortality; that it is independent of environmental influences. A number of careful workers feel that it is impossible to determine whether the reported increase in mortality is real, or whether education of the public and improvements in medical technic cause cancer to be recognized more frequently in persons who, prior to these progressive developments, had no recourse to physicians, and who died from intercurrent diseases.

Statistics assembled by some countries indicate that cancer occurs more frequently in certain parts of the body, such as the mouth, tongue, throat, stomach and skin, in poorer sections of society. Results such as these are attributed mainly to habits, substances ingested, and the occupation of patients. Comparatively little statistical data appears certain when we undertake to appraise conflicting testimony of men studying the cancer problem in every quarter of the globe. The most of workers engaged in solving this perplexing problem at the present time are willing to concede that about 50 per cent. of all cancer occurs in the intestinal tract, and that about 16 per cent. is found in the rectum and sigmoid colon. Other points about which controversy is not so pronounced are that sarcoma and carcinoma result from the same cause; that transplantation takes place through a carcinogenic agent of substance as yet unknown; that no age is immune to the ravages of cancer; and that our knowledge of its origin is still imperfect. Nearly all agree that further efforts at lay education are needed; that roentgen rays and radium are palliative in a certain percentage of cases; that no theory regarding the origin of cancer has met with general acceptance; and that neoplasms of human beings and those of mice, rats, chickens

and other animals are not identical.

Moreover, plausible reasons are advanced to explain why cancer of the stomach, intestines and internal viscera are rare in China when the incidence is compared with that of America, and why cancer of the prostate and bladder are more common in this country than in China. Many other observations are found in the work of medical writers pertaining to the number of tumors found among the Javanese, American Indians, Malaysians, natives of Africa and other races. But when each part of such evidence is scrutinized it becomes less interesting and of questioned value as a settled and accepted scientific truth. Careful investigation shows, in many instances, that even though all factors relating to cancer are identical in certain parts of the world and during certain periods, comparatively little pertaining to its origin and treatment appears to be invariable and firmly established. Its manifestations and methods of attack and resistance to therapy are so varied one is, necessarily, impelled to withhold final judgment on nearly everything pertaining to the disease.

Accepted methods in the treatment of cancer at the present time are by surgery, x-rays and radium; numerous surgeons praise the efficacy of ligation, electrosurgery, and desiccation. There are more than a score of different forms of therapy for the disease, and some of them are employed by men who cannot be swayed from their faithful adherence to a chosen form of treatment. One point of agreement among nearly all who are seeking a cure for the disease is that a large proportion at least of cancer mortality is of a preventable nature. With comparatively few exceptions workers in this field point to early operation as one of the successful measures that has been demonstrated everywhere. Other surgeons of ability and long experience assert that very little has been accomplished toward finding a lasting cure that will dissipate clouds of pessimism arising from long lists of failures and the dread of metastases and recurrences.

Perhaps the majority of roentgenologists are convinced of the value of preoperative and postoperative irradiation in breast cancer, but few surgeons can be found who are enthusiastic about it. Many surgeons give postoperative x-ray therapy in breast cancer as a routine or because it is customary. There does not appear to be any unanimity of method in the ranks of roentgen-

ologists; the proper dosage is a matter that has been left largely to individual opinion and judgment. A large number of roentgenologists depend on radium therapy alone for certain types of cancer, while others give deep therapy in addition. In the use of radium some give more mg. hours than others; some treat the growth with needles or gold seeds while others never employ them. That optimism and pessimism seek ascendancy in their efforts to correlate facts showing that cancer is being successfully controlled, or to reject defective and presumptive evidence, is clear when one scans the literature carefully. True, there are many failures and much unhappiness that frequently blot out dreams of success, when one finds after three years or five years, and even longer, that much dreaded metastasis has carried the disease to distant tissues where it again begins its work of destruction. This discouraging picture of the ravages and uncertainties of cancer must give way to self-evident truths, however. Although the incidence of certain cures in cancer is relatively small, many are cured permanently by virtue of early recognition and complete extirpation of the growth, or by judicious treatment with x-rays or radium during its incipiency and early stages. It is this measure of success that keeps the determination of medical men alive. Despite repeated failures they accept every challenge and again resolutely set forward with a fixed purpose toward one goal, namely, the final conquest of malignancy.

Among the conspicuous examples that may be regarded as unanimity of opinion relating to results, established facts, and methods of treating cancer are: 1, Irradiation is the preferred treatment of carcinoma of the cervix, and cases are rarely seen in the early stages; 2, that about one-third of the total mortality is attributed to cancer of the stomach, and that many medical men regard such cases as hopeless; 3, there are several times as many breast amputations for cancer as there are for resections in various regions of the alimentary canal; 4, prospects for effecting a cure in prostatic cancer are not encouraging; and 5, it appears that skin cancers are more amenable to treatment than are other types.

Excellent results were reported by Collins¹ in which he describes four groups of malignant tumors. He feels that complete recovery is more

1. Collins, E.: Indications for Irradiation of Certain Malignant Tumors, Hospital., Copenhagen, 72: p. 521, 1929.

surely attained by irradiation than by operative treatment, and with more satisfactory results for the patient. Ten patients were treated and all were cured without any defect after one radium treatment or a series of roentgen treatments. These cases consisted of skin cancer, cancer of the lip, cancer of the glans penis in young men, and malignant epulis after operation. His patients have been under observation over a period of from three to seven years. Others believe that irradiation brings about the same results as surgery, especially in carcinoma of the uterus, and that roentgen rays should be employed in small doses in every case. Still others scorn the use of radium and say that its efficacy as a curative agent has been exaggerated; that certain observations have not been based on an adequate scientific foundation. It is the opinion of Crile² that "no general rule can be given for the treatment of carcinoma in every part of the body, and no final rule can be given for the treatment of carcinoma in any one part of the body." Perhaps no one will contend that any type of radiation has ever had a tendency to spread a cancer or cause metastases.

In 1925 Bell³ called attention to a number of cases of malignant diseases that had been arrested by the intravenous administration of colloidal lead. Since that time the results of numerous scientific writers in the treatment of cancer with this form of therapy, have been enthusiastically acclaimed, and we have much clinical and experimental literature on the properties of lead. Some gave glowing accounts of their success with the use of lead in the early days, and many still believe that it has a beneficial effect on patients suffering from malignant tumors. These observations do not harmonize with the concepts of other investigators and they assert that severe systemic reactions often follow the use of lead. They attribute any success with lead therapy to the efficient use of x-rays which is almost always employed at the same time, or they remind one of the fact that occasionally we meet spontaneous regression or natural cures in malignancy.

Heavy metals and their salts have been employed more or less for many years in the treatment of malignant growths. The use of lead

arose from the experience of some investigators who stated that workers in lead seldom develop cancer, and that those who have lead poisoning do not have it. It is claimed that its main therapeutic value appears to lie in its ability to restrain metastases or to destroy small and recent carcinogenic deposits. Many workers in this field do not believe the general application of this assumption. Almost all of those who use it in cancer therapy irradiate the growth with x-rays both before and after the administration of lead; it is the opinion of a few that lead assists in the effect of radiation, and that pain is alleviated by its use. Colloidal lead phosphate is the form employed in the most of cases. The investigations of Woodhouse⁴ lead him to conclude that "not one of the lead compounds was a suitable agent for controlling malignant growths." He admitted that lead injections may inhibit growth in some instances so that they are less active, but he thought that they have no influence on sarcoma.

Experiments of numerous scientists on rats and mice have lead them to conclude that the feeding of certain vitamins in excess favors tumor formation in addition to their specific action. It has been shown that a diet deficient in all vitamins retards tumor growth more than food in which certain vitamins are omitted. Basing their warning on such findings, those who have carried out these experiments say that it is inadvisable to take large amounts of vitamins at any time. We are reminded that cancer frequently develops slowly and it may remain latent for many years. Additional forms of therapy that have been lately vaunted as cures are the use of pepsin, the extract of spleen, snake venom, and the surgical relief of pain in hopeless cases by sectioning nerve pathways. Laminae overlying the posterior roots of the cord are removed, and after opening the dura the roots are crushed or cut.⁵ A number of men have experimented with cobra venom, and it is the opinion of a few that it relieves pain to some extent. Others have come to the conclusion that it is of little value, and that it has no action on human cancer.

Some scientific workers employ autogenous vaccines that have been previously exposed to radium. A number have suggested that dis-

2. Crile, G. W.: Results of Treatment of Cancer by Different Methods, *J. A. M. A.*, 92: 261, 1929.

3. Bell, W. B.: *Lancet*, 2: 1003, 1925.

4. Woodhouse, D. L.: Chemotherapy Investigations in Cancer, *Amer. Jour. of Cancer*, 27: 285, 1936.

5. Fay, Temple: Surgical Relief of Pain in Extensive Malignant Disease, *J. A. M. A.*, 91: 375, 1928.

turbances in the endocrine glands may be a determining factor in cancer. Others assert that we should give more attention to discovering a successful treatment and less effort in search of a cause. There is a growing belief that the growth-producing substances of malignancy is an enzyme or ferment. For a long time many have believed that cancer-producing substances are manufactured and set free by the body itself in the normal course of its activity. What more evidence is needed to make it definitely clear that medical men everywhere are doggedly advancing against the strongholds of malignancy? Repeated rebuffs check them, but they do not stop them. Newer discoveries will probably be forthcoming, and future investigation will refine our present ideas about it. Malignancy will finally be conquered.

THE 1941 ANNUAL MEETING

You will find the official program and announcements for the 1941 Annual Meeting of the Illinois State Medical Society in this issue of the Illinois Medical Journal. The meeting will be held in the Palmer House, Chicago, on May 20, 21, 22. The program will be of interest to all members of the State Medical Society and it is quite obvious that the 1941 annual meeting will be an outstanding event in the history of the Society.

All meetings will be held in the convention section of the Palmer House and all exhibits will be displayed in this fine institution. The technical exhibits will be displayed in the large exhibit hall while the scientific exhibits will be shown in the Red Lacquer room on the third floor of the Palmer House.

The exhibits for the meeting have been carefully selected and should be of much interest to all physicians present. The technical exhibits will show what has been done during the past year by the many concerns of the country interested in medical progress, and the scientific exhibits will show the scientific advances in medicine during the same period.

The number of invited guest speakers is larger than usual, and the speakers have been carefully selected from various parts of the country, and each will speak on a subject of general interest to all physicians.

The Chicago Medical Society, acting as host for the meeting, has endeavored to have everything properly arranged, and the many committees have been working diligently with this aim in view, for many months and the results of these efforts will be manifest to all who attend the meeting.

We would urge the many members and guests intending to be present during the annual meeting to write the Palmer House and make suitable reservations, for although the Palmer House is one of the country's largest hotels, it will be taxed to the limit during this meeting. Chicago, however, is amply supplied with fine hotels and everyone will be able to find suitable quarters during the meeting.

All meetings scheduled will be conducted on Chicago Daylight Saving Time, and this fact should be kept in mind by those coming to the meeting from communities where Central Standard Time is used.

Special announcements relative to the meeting and emphasizing many of the high lights will be found in this issue of the Journal, and also the fine array of post convention clinics which have been arranged by the many hospitals of Chicago. The hospitals and medical schools have been cooperating with the committee on arrangements and will not have any meetings during the annual session which would in any way interfere with the programs.

*DO NOT MISS THE 1941
ANNUAL MEETING!*

BLOOD BANK FOR ALL NEEDS

The first county medical society in the United States, we believe, to undertake such a service, the San Francisco County Medical Society has decided to establish and maintain a blood bank for instant use at need for any victim of illness or accident in San Francisco and the surrounding communities and at cost.

This should be an extremely valuable service. At present the only blood bank in this city is that maintained at the San Francisco Hospital for its indigent patients. This new one will be on call for all who need a supply of blood, rich and poor alike.

While the war lasts, the Society intends also to cooperate with the British War Relief Association in preparing stocks of blood for use in Britain. The Association is one of the supporters of the bank and on its own account already has what it describes as a large list of Californians ready to give blood for the British wounded.—Editorial, *San Francisco Chronicle*, January 23.

MEDICAL ECONOMICS

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Address all letters and communications to the Chairman.

The decision in the Federal Court of the District of Columbia on April 4, 1941 in the case of the United States Government against the American Medical Association, The District of Columbia Medical Society et alles, was the outstanding news of the month to the medical profession of the United States. While all except the American Medical Association and the District of Columbia were found NOT Guilty, these two were adjudged GUILTY. It is difficult for a non legal mind to reconcile the fact that the two organizations were guilty while none of their officers, being tried at the same time were guilty. Much has been written in the lay press in regard to this decision. Probably one of the most amusing and at the same time consoling to the medical profession, was that printed in the Chicago Tribune of April 7, 1941. This will be printed in this column immediately following this editorial this month. We hope that those of you who have not read it previously will do so and that the rest will again get a chuckle by re-reading its caustic satire. Just what the future will develop in this case is not known definitely to the writer at this time, but he is under the impression that an appeal will be taken at least to the Court of Appeals and possibly to the Supreme Court of the United States if necessary to clear up once and for all the question of whether the practice of medicine is trade or a profession.

The examination of selectees for the Selective Service continues at a rapid pace. In spite of criticism and inadequate facilities the medical profession continues to do its work gratuitously. Dr. Harold Camp, our Secretary, who in addition to his regular duties is in charge of the selection of the medical personnel for these examinations, has written an article on the work in this field. This follows the editorial from the Chicago Tribune above referred to and should be read by every physician who is working on either a local or an advisory board. We have this work to do and it must be done thoroughly and well, regardless of conditions and personal opinions in the matter.

A call was made by the President of the United States for physicians to volunteer for service with the Red Cross in England. One thousand men were asked for, preferably from the younger men in the profession. There is little doubt as to the need of these additional medical men in England, with so many physicians in military service and the extent of civilian needs resulting from the terrible wide spread bombing of cities thruout England and Scotland. Undoubtedly valuable experience would be obtained by those who volunteer. It will be interesting to see how great a response there will be to this call from the President. In spite of the work being under the Red Cross, there will be danger connected with such service.

Again death has swept his icy hand into the official family of the Illinois Medical Journal. This time the Editor Dr. C. J. Whalen was called. Coming so soon after the passing of his friend and assistant, Dr. H. G. Ohls, it makes an irreparable hole in that organization. Dr. Whalen has been of untold assistance to the writer of this column during the years since it was started. He was patient, helpful and kind. His passing will be missed by all of us and the writer will miss him particularly. We extend our sympathy to his widow and children.

In the event that this column is under new management after the annual meeting, the entire Committee wishes to thank all of you for your cooperation in the past and ask you to accord the same cooperation to the new committee, particularly the Chairman.

E. S. Hamilton, M.D., Chairman

THE AMA NEEDS A NEW CHARTER

The American Medical association and its local society in Washington, D. C., have been convicted by a federal jury of violating the anti-trust law. At the same time the jury acquitted all of the individual defendants, who included the principal executive employes of the association.

This verdict had a parallel some months ago

in the federal court at South Bend, where the General Motors corporation was convicted of violating the antitrust laws in financing the sale of its cars, but all of the officers of the corporation were acquitted. This, as it turned out, was most fortunate for Mr. Roosevelt. It saved him the embarrassment of plucking one of the defendants, Mr. Knudsen, out of jail when he needed him to head OPM.

The jurors seem to have been in no doubt that a crime was committed, yet when they were asked to say who committed it their answer was, "Nobody." Perhaps the legal metaphysicians can straighten us out. Queries might well be addressed to the prosecutor of the case, Mr. Thurman Arnold, who has written that anti-trust prosecutions are a sham anyway, being designed to propitiate the public conscience for allowing acts that our moral sense tells us are wrong but which our practical judgment says are necessary.

The charge against the doctors at Washington was that they engaged in a conspiracy in restraint of trade against the Group Health association, an organization that undertook to furnish government employes with medical care in return for a flat monthly fee. The AMA asserts that arrangements of this type tend to lower the standards of medical care, and in consequence its members, at the instigation of the association's leaders, refused to have any professional relations with the physicians hired by the Group Health organization.

The antitrust conviction may impress upon the members of the AMA that when they organized they took out the wrong kind of a charter. They should have applied to William Green or John L. Lewis. So equipped, they would not have been reduced to refusing to practice in the same hospitals with a physician who signed up with Group Health. Dr. Morris Fishbein could just have gone around some evening and broken the wrong guy's fingers with a blackjack, an operation that does a surgeon no more good than it does a musician, and Mr. Justice Frankfurter would have told Thurman Arnold not to get himself all wrought up over a passing moment of animal exuberance.

A good broad AFL or CIO charter would solve a lot of the medical profession's economic problems. Its members would not have to worry about overproduction of doctors. They could

just close their membership rolls and have some of their members, sitting on the state and local examining boards, prosecute the newcomers for practicing without a license.

Draft boards wouldn't be asking physicians to give their services free for examination of the draftees. All the chest thumping in charity wards would be done at the union scale and any non-union medico who tried to cut in on the business would have to pay a \$1,000 initiation fee. Ladies expecting offspring would have to be careful that the labor pains did not start after 4 p.m. on a Friday; otherwise Papa would have to pay double time for a week-end delivery.

The medical union might be able to take on a number of profitable activities that AMA members now deny themselves, such as performing abortions or, for a suitable fee, slipping a dose from the black bottle to millionaires whose heirs were growing impatient. While such activities might arouse public protest, the union does could be sure that President Green would not bother them. That would be interfering with their autonomy.—*Reprinted from The Chicago Daily Tribune. April 7, 1941.*

SELECTIVE SERVICE AND THE MEDICAL PROFESSION

Medicine once more accepts the challenge and is working diligently with the Selective Service System in examining the thousands of young men each month for military and naval service. This means of course, a tremendous sacrifice on the part of physicians. Just as in former emergencies, Medicine has not been found backward in its work, or lacking in patriotism. Plans were well under way more than a year ago to organize within the members of the medical profession so that in the case of any emergency, we would be ready for necessary services.

Approximately 16,500,000 young men registered last year for the draft, and of this number it is thought that perhaps 6,600,000 will be called for examination, and 4,400,000 accepted for service during the five year period. From this it can be readily seen that only the best men need be called for training, and only those men who can readily be classed as 1-A need to be called.

On account of the many rejections reported in recent weeks many believe America to be a nation of weaklings, but that is not the case. With

the present rulings, the medical examiners are naturally more careful in weeding men out who have only minor impairments, many of whom could become good soldiers if necessary.

The medical examiner has a great responsibility indeed, and he must not only be thorough in his examinations, but also be completely fair and impartial when examining the individual registrant. Every examiner should be thoroughly familiar with the Selective Service Law, and the rules and regulations which are contained in the six small volumes. The volume in which the examiner is especially interested is Volume 6 relative to medical examinations, which is literally his "Bible" as far as examinations and subsequent classifications are concerned.

Approximately 18,000 physicians are now doing some work for the Government under Selective Service, as examiners for local Boards, members of Medical Advisory Boards, Boards of Appeal, and in state and national Headquarters. The physician is primarily interested in the questions pertaining to classification — whether a man is fitted for unlimited military duty, limited duty, or through some physical or mental impairment, is not fitted for any type of service.

The medical division of the National Selective Service System recently released statistics based on early reports showing the principal causes of physical rejection, as follows:

1. Teeth	17%
2. Cardiovascular system	13%
3. Musculo-skeletal defects	10%
4. Eyes	9%
5. Genitalia, including V.D.	6%
6. Mental and nervous	6%
7. Ears, nose and throat	6%
8. Hernia	5%
9. Feet	4%
10. Lungs	3%

This shows that the greater percentage of rejections for service is for defective teeth. With this in mind, the officials have approved the suggestion that dentists should be attached to all local Boards to give the required dental examinations which they can give more efficiently than members of the medical profession. This is being done at the present time in Illinois, and within a short time dental examiners will work with the medical men in making the Selective Service examinations.

The second principal cause for rejection is

cardiovascular troubles, and here is a most important consideration for all examiners, for many times these young selectees have not had previous examinations, and perhaps conditions elicited as far as pulse rate or blood pressure readings are concerned, they may be affected to a certain extent by excitement. It has been suggested that when selectees are apparently disturbed by the examination, that they be permitted to remain at ease for a reasonable period, or if, on repeated examinations, pulse rate or blood pressure records may be slightly abnormal, that they be permitted to return another day for a check up before any actual classification is made.

It is the desire of the medical division of national Selective Service to overcome as much as possible some of the defects in the draft regulations and examination instructions for the World War. At this time it is desirable to pay more attention to possible mental and nervous conditions for we are told that the cost to the Government for the care of mental and nervous wards of the nation since the last War is approximately \$32,000 per case. Many of these men giving a diagnosis of "shell shock" were actually shell shocked before their services began and many should have been eliminated from service had the proper precautions been taken.

This is likewise true with tuberculosis which we are told has cost the Government more than \$20,000 per case since the World War, and today more attention is given to the chest examination. When deemed advisable many selectees who have possible chest lesions are referred to the Medical Advisory Board for complete x-ray examinations of the chest. Each selectee today is required to have a serological examination for syphilis, and many men are placed in a deferred classification when the test shows evidence of active syphilis. This like many other conditions which require a deferred classification, is correctable, and with proper treatment many men can be re-classified later in safety.

Defective teeth, vision, syphilis, and other conditions are usually remediable, and with the proper attention, men previously deferred, may be able to qualify for class 1-A, especially if they are willing to cooperate and desire to have these defects corrected.

During the early months of examination of selectees, most of the examinations have been

made in the office of the local examiner who frequently has done this work alone. More recently in Illinois a bulletin has been released which gives permission for the organization of an examining team, with the work divided among the several examiners. In this way the examinations may be made on designated days when several physicians and dentists can get together in a central place and examine a number of selectees at the same time.

In a recent address made in Illinois Col. L. G. Rowntree, M.D., Chief, Medical Division, National Headquarters of the Selective Service Administration, stated that "Certain rules are very essential to a high degree of success in the examination and selection of registrants. Perhaps the most important of these are:

1. Know, adhere to, administer intelligently all regulations.
2. Insist on adequate equipment and personnel.
3. Review each record for physical, mental and moral defects.
4. Procure all information available from family physician and social agencies.
5. Consider medical group examination and hospital affiliation.
6. Complete examination. Record entry in each blank including optionals, pulse, blood pressure, etc.
7. Avoid extraneous influences, personal, political and emotional.
8. Study Army rejections.
9. Locate, contact and work with the Medical Advisory Board.
10. Accept or reject only *if certain*, otherwise refer to the Medical Advisory Board.

"In connection with the mention of the Medical Advisory Board, the desirability of using the facilities of this Board whenever doubt of any kind exists, cannot be too greatly emphasized. The Medical Advisory Board is composed of ten or more competent specialists whose function is to review all controversial cases, to assist in determining the fitness of registrants, and to render expert opinion in all matters referred to them. They were created to aid the local Board physician. They were organized to protect the interests of the registrant and the public as a whole. Use them whenever doubt exists in your mind. If you will accept these suggestions in the spirit they are given, follow them with the sincer-

ity of your profession, then there can be little doubt that you will have done your job well, and that you will have served this nation to the fullest in a time of need."

At the present time the Illinois State Medical Society, through its Committee on Medical Preparedness, is aiding in a nation-wide survey at the request of the American Medical Association Committee on Medical Preparedness, to get first hand information concerning the physicians in this country. Many Illinois physicians are now in Military or Naval service, and more are being called each month. It is important that we determine the physicians in each county of this state who are deemed essential for civilian care — care of industrial workers in essential industries, and for other necessary services at home.

Proper forms have been sent to each county society Committee on Medical Preparedness to procure this information which should be forthcoming without any unnecessary delay as it is urgently needed at this time. The information when received will be tabulated and the reports submitted to the proper Governmental Agencies to aid them in the calling of additional physicians in the near future. There are a few counties in Illinois right now where several of the younger men have been called for service and the civilian population finds it difficult to get the desired medical care. It is the desire of our Government in the program for national defense to prevent this as far as possible in the future.

Every county medical society should see that the local Committee completes these forms and returns them promptly with a minimum of delay.

It is quite obvious that once more the medical profession of America is cooperating with the Government in all considerations referable to national defense, and when physicians are needed for army or navy service, physicians are willing to do their part.

The rapid decline in tuberculosis mortality rates has been due mainly to lessening in the incidence of infection. Among those infected, the toll, though diminished, is still appalling. Mortality statistics, morbidity reports, autopsy examinations, tuberculin tests and X-ray surveys indicate that about half of all infected individuals develop clinical tuberculosis, and that from 10 to 20 per cent of them eventually die of the disease. The high risk of disease and death due to infection by the tubercle bacillus justifies increased efforts for its prevention. Emil Bogen, M.D., Amer. Rev. of Tuberc., Aug. 1940.

Correspondence

WOMAN'S AUXILIARY, ILLINOIS STATE MEDICAL SOCIETY

The Fourteenth Annual Convention of the Woman's Auxiliary to the Illinois State Medical Society will be held at the Palmer House, Chicago, Illinois, May 20th and 21st.

The Social Functions are:

Tuesday, May 20th.

12:30 P.M. Luncheon — Palmer House Club Building.

Local Chairman, Mrs. John Wolfer.

3:45 P.M. Illustrated Lecture and Tour of Mrs. James Ward Thorne's American Rooms in Miniature. Art Institute. Local Chairman, Mrs. Henry L. Schmitz.

7:00 P.M. Dinner — Lake Shore Club, with Fashion Review by Saks Fifth Avenue. Local Chairman, Mrs. A. F. Gareiss. (Transportation Provided.)

Wednesday, May 21st.

1:00 P.M. President's Luncheon. Palmer House Club Building.

Local Chairman, Mrs. Frederick Tice.

4:00 P.M. Musical-Tea. Arts Club. 400 N. Michigan Ave.

Local Chairman, Mrs. Nelson Percy.

All is in readiness for the convention. A few minor changes are yet to be made as the estimates of the attendance change but these are the present duties of the various committees. A great deal of assistance can be given your officers if the members will make their reservations by mail before the convention starts. Ticket Chairman is, Mrs. D. J. Duggan, 5129 West Drummond Place, Chicago, Illinois.

As the year draws to a close and with it the duties of this committee, we look back over the months of work feeling that much has been done. More could have been accomplished, however, if we had only known about the news of the County Auxiliaries before the events happened. We trust that we are not asking too much, for our successor, to invite the Publicity Chairmen to submit their programs in advance of their meetings instead of forwarding news items weeks or months after they have taken place. There is an oft repeated adage, "News becomes history at the time of its happening." It has been only with the courtesy of Dr. Whal-

en, the late editor of the Journal, that we have been allowed to carry on.

Only last month Dr. Whalen passed away. Our monthly news items were on his desk in his home at the time of his death and were not found until after the Journal had gone to press. He always believed in the Woman's Auxiliary and was interested in its work, its problems, its successes and failures. He was the same with the Medical Society. His efforts over the years of service have resulted in many changes of policy, always for the better. He was a man of vision and he loved "Medicine" so long as it progressed on a sound basis. Dr. Whalen was a great editor because in all of his own initiated changes that proved to be improvements we seldom read his name. He did not care for glory except as it reflected like a beacon light upon his "Medicine." We are all going to miss this fine old gentleman. Reams could be written in eulogy for him by all of the branches of medicine and its auxiliary but no greater tribute can be paid to his memory than to write, of his work, just those two most expressive words in the English or any other language, "Well Done."

Mrs. C. W. Stuart,

Press and Publicity Chairman.

ALUMNI-FACULTY REUNION

The annual alumni-faculty reunion of Northwestern University Medical School is being held May 23 and 24, 1941. On May 23rd a golf tournament will be held at the Illinois Country Club in the afternoon, with dinner at the club in the evening. On Saturday, May 24th, a symposium on sulfonamide preparations and their value in military medicine, participated in by members of the faculty, will be given in Thorne Hall. There also will be informal speeches by alumni who have just returned from the eastern and western war fronts. In the evening the annual Faculty-Alumni banquet will be held at 6:30 P. M. in the Grand Ballroom of the Knickerbocker Hotel. Entertainment will be furnished by the senior class.

All Northwestern medical graduates are urged to attend as an instructive and entertaining two days are anticipated. Dr. Howard B. Carroll '25, Chairman in Charge.

Walter H. Nadler '13

President, Medical Division

Northwestern Univ. Alumni Association

AMERICAN COLLEGE OF CHEST PHYSICIANS TO HAVE DINNER MEETING

The Illinois Chapter of the American College of Chest Physicians will hold its annual meeting at the Palmer House, Tuesday, May 20, 1941. Dinner will be served at 6:00 P.M. and this will be followed by a scientific program. The main speaker will be Dr. Richard Davison, Secretary of the Board of Directors and Chief Thoracic Surgeon of the Municipal Tuberculosis Sanitarium to Chicago who will speak on "Extrapleural Pneumothorax." Following his address, the subject will be open for discussion. A business meeting will follow this at which time the election of officers for the ensuing year will take place. For dinner reservations, contact the Executive Offices of the American College of Chest Physicians, 500 North Dearborn Street, Chicago, Illinois, Telephone, Superior 7810.

CHICAGO SURGICAL SOCIETY AWARD

The third annual award of the Chicago Surgical Society was made at a meeting of the Society on Friday, May 2nd, to Dr. J. Garrott Allen of the University of Chicago, Department of Surgery, for his paper entitled "Some Aspects Concerning the Physiology of Prothrombin and Vitamin K."

This annual prize of \$250.00 is offered to some young man devoting himself to surgery in Chicago, who is not a member of the Chicago Surgical Society, for meritorious work in one or both of the fields of experimental and clinical surgery.

Competitive papers for the 1942 award should be submitted on or before March 1, 1942, to the secretary of the Society, without identification marks, accompanied by a sealed envelope bearing on its outside the title of the paper and containing within it the name and address of the author.

EXAMINATIONS AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY

The general oral and pathological examinations (Part II) for all candidates (Groups A and B) will be conducted at Cleveland, Ohio, by the entire Board from Wednesday, May 28, to Monday, June 2, 1941, inclusive, prior to the opening of the annual meeting of the American Medical Association in Cleveland.

Formal notice of the time and place of these

examinations will be sent each candidate several weeks in advance of the examination dates.

Candidates for *reexamination* in Part II must make written application to the Secretary's Office before April 15, 1941.

The Board requests that all prospective candidates who plan to submit applications in the near future request and use the new application form which has this year been inaugurated by the Board. The Secretary will be glad to furnish these forms upon request, together with information regarding Board requirements. Address Dr. Paul Titus, 1015 Highland Building, Pittsburg (6), Pennsylvania.

This Board will hold its annual dinner for Diplomates, and others interested in the work of the Board, on Wednesday evening, June 4, 1941, at the Wade Park Manor Hotel, Cleveland, Ohio, immediately following the close of the Part II examinations. Diplomates certified at the preceding days' examinations will be introduced personally, and there will be several speakers.

Tickets at \$3.25 each may be obtained from Dr. Joseph L. Baer, chairman, 104 S. Michigan Avenue, Chicago, Illinois, or at the Registration Desk during the examination period.

THE SECOND AMERICAN CONGRESS ON OBSTETRICS AND GYNECOLOGY

The Second American Congress on Obstetrics and Gynecology will be held in St. Louis, Missouri, April 6 to 10, 1942. All of the meetings and both the Commercial and Educational and Scientific Exhibits will be held in the Public Auditorium.

The various committees have been set up and the following Chairmen have been appointed:

Executive Committee — Dr. Fred L. Adair, Chicago

Program Committee — Dr. E. D. Plass, Iowa City

Motion Picture Committee — Dr. Robert D. Mussey, Rochester

Educational and Scientific Exhibits — Dr. H. Close Hesselstine, Chicago

Commercial Exhibits — Dr. Philip F. Williams, Philadelphia

Lay Publicity — Dr. Joseph L. Baer, Chicago

Professional Publicity — Dr. George W. Kosmak, New York

Publications Committee — Dr. Goodrich C. Schauffler, Portland

Evening Meetings — Dr. Robert L. DeNormandie, Boston

Membership Committee — Dr. Buford G. Hamilton, Kansas City

Budget and Finance Committee — Dr. William C. Danforth, Evanston

The general plan for the program will be much the same as that of the first Congress, which was held in Cleveland, September 11-15, 1939, with sectional meetings for the various groups (nurses, public health, administrators, educators, and physicians), general sessions for all members attending the Congress and round tables. There will be evening sessions open to the general public.

Adequate time for registration will be given the first day, before the opening of the sessions of the Congress. Admission to the Congress will be by individual membership card only. These may be secured by payment of the five dollars registration fee, any time after September 1, 1941.

At the suggestion of the Medical Exhibitors Association, more time will be allowed for the members of the Congress to visit the Exhibits. The response to a letter sent to the firms handling products of interest to our group telling them of a second Congress has been excellent and we are assured of an excellent Commercial Exhibit.

The hotel headquarters have not been assigned to the various groups as yet, but the Medical Section and General Congress Headquarters will be in the Jefferson Hotel.

For further information, apply to the Chicago office of the Congress, 650 Rush Street.

UNITED STATES CIVIL SERVICE EXAMINATIONS

SENIOR MEDICAL OFFICER, \$4,600 A YEAR

MEDICAL OFFICER, \$3,800 A YEAR

ASSOCIATE MEDICAL OFFICER, \$3,200 A YEAR

Public Health Service, Federal Security Agency
Food and Drug Administration, Federal Security
Agency

Veterans' Administration

Civil Aeronautics Administration, Department of
Commerce

Indian Service, Department of the Interior

Applications must be filed with the United States Civil Service Commission, Washington, D. C. They will be rated as received and certifi-

cation made as the needs of the service require. When sufficient eligibles are obtained, the receipt of applications will be closed, in which case due notice will be given.

A subsequent application will not be accepted from any applicant within 3 months of the date of receipt of his preceding application under this announcement.

When an applicant who has been rated eligible in this examination for any of the grades listed above files a subsequent application, but is found ineligible for a higher grade than that for which he has been rated, his application will be canceled and no additional rating will be assigned him in the grade for which he is already eligible.

The United States Civil Service Commission hereby amends Announcement No. 101 to include the options indicated under the following grades:

Senior Medical Officer

Option 4. Public Health (General)

Medical Officer

Associate Medical Officer

Option 15. Diagnosis and Treatment of Cancer

Further information regarding the examination is contained in the original announcement.

This amendment replaces the previous amendment.

Issued: March 24, 1941.

ONE HUNDRED VISITORS

R. R. LOAR, M. D.

BLOOMINGTON

One of my patients told me of one of her friends who had one hundred visitors during her post partum hospital stay.

With exceptions, of course, I believe the extent to which visiting is controlled in the obstetrical department of a general hospital is a pretty good index as to the general grade of obstetrical work being done in the institution.

Probably the small open staff hospitals have the greatest trouble due to the fact that there are many men doing OB work there, and if the hospital has rules and enforces them it runs the risk of antagonizing friends or relatives of the patient.

In a limited article such as this it is only possible to mention a few reasons why visiting is undesirable, without going into a detailed discussion of each.

Here are a few — there are others many of

you can think of.

1. The danger of carrying infection to the patient.

2. The exhausting effect on patient from efforts to entertain visitors.

3. Psychology. Visitors often well meaning leave disturbing ideas in the mind of patients who have plenty of time to develop them.

4. The noise and confusion of the visiting hours is disturbing to all. With four or five visitors to a room, what chance has the patient in the next room?

5. How much cleaning could be avoided by reducing the street dirt carried in by visitors?

Changes require time. The obstetrical hospital led the way in many ways and the general hospital is gradually adopting many features long in use in the restricted hospital. Hospital visiting restrictions are among these but cooperation of hospital, doctor, patient, relatives and friends is necessary.

The foundation for this cooperation should begin with the first prenatal visit. The rules are explained to the patient and she can begin early on friends and relatives to acquaint them with the fact that she expects to rest after her baby comes, instead of supplying entertainment for her circle of friends while in the hospital.

I believe prenatal care of friends and relatives would help to pave the way for a smoother post natal period for the mother.

For several years I have limited visiting to two individuals, the husband and mother of the patient. In the absence of the latter one member of her family or a close friend is substituted. This plan saves me much arguing and simplifies the matter for the patient.

BLOOD PLASMA RESERVOIR TO BE ESTABLISHED

William DeKleine, M.D.

Medical Director American Red Cross

Creation of a national reservoir of blood plasma to be used by the Army and Navy for emergency transfusions, as well as for treatment of civilians injured in disaster, is now actively under way. Sponsor of the project is the American Red Cross which has undertaken the step in response to a joint request received early in February from Surgeon General James C. Magee, U. S. Army, and Surgeon General Ross T. McIntire, U. S. Navy.

Use of blood plasma for transfusion purposes has long been a subject of study on the part of the medical profession. These studies have shown that plasma has definite advantages over whole blood. For

instance in traumatic shock and hemorrhage, two of the more frequent causes of death from wounds and injuries, plasma is ideal.

In these cases speed is the thing that counts and plasma lends itself to speedy use. It completely eliminates typing or cross-matching whereas when whole blood is used, either from a bank or donor, one or the other of these steps is necessary. This may prove exceedingly costly from the standpoint of both time and life, especially in the chaos that prevails in the wake of battle or disaster. Furthermore, plasma can be collected and stored at central, readily accessible points for lengthy periods while whole blood must be used soon after collection as it begins to deteriorate in a few days. Plasma may be transported any distance but whole blood, generally speaking, must be used near at hand as shaking damages it materially. Finally, the administration of plasma is exceedingly simple.

Last summer, in response to an urgent request from England, the American Red Cross in cooperation with the Blood Transfusion Betterment Association began collecting and shipping plasma to Great Britain. This program, which was used incidentally by the Red Cross for an intensive study of the collection, processing, shipping and distribution of plasma, was terminated February 1, 1941, when the British Red Cross announced it had perfected plans that would enable it to carry on from there. While the program was in operation, approximately 15,000 pints of plasma in saline solution were shipped, representing donations from that number of persons.

During this same period the Medical Corps of the Army and Navy, and a special committee of doctors of the National Research Council also were pursuing an intensive study of the use of plasma. It is from these simultaneous activities that the present project of creating a national reservoir of blood plasma springs.

The substance is being prepared in two forms: lyophilized, or dry, powdered plasma which, by the simple addition of sterile, distilled water, is ready for use, and ordinary liquid plasma. Present plans call for the production of 10,000 units of dried plasma, a unit being equal to one pint of processed whole blood. The amount of liquid plasma to be stored has not been definitely determined as yet. Though liquid plasma has been used with excellent results after months of storage, it is believed that dried plasma, properly packed in a vacuum, can be kept for years.

Processing of whole blood for the production of plasma is being done at the Sharp and Dohme Laboratories in Philadelphia, Pa., where the product is also being stored. Donors are currently being enrolled by Red Cross Chapters in the Greater New York area and in Philadelphia. As need arises, Chapters in other districts will be called upon to enroll donors who will be asked to give a pint of their blood so that others who may be bearing the brunt of battle for democracy will live.

Separating plasma from the cellular elements of whole blood is accomplished by centrifuging at a tem-

perature of two to four degrees centigrade. Plasma from 50 persons is then pooled.

This pooling eliminates the necessity of classifying plasma with respect to the blood group of the recipient. Typing of the recipient's blood is unnecessary because the agglutinin titer of pooled plasma is extremely low and no erythrocytes are present to be agglutinated by the potentially incompatible serum of the recipient.

After pooling, individual containers of 250 cc. capacity are filled with plasma. To maintain sterility until ready for the next step of the process a sterile, cotton-plugged rubber tube is applied over the mouth of the container.

Liquid plasma is converted to the frozen state at a temperature far below freezing. The container is immersed in a mixture of dry ice in a low-freezing solvent. It is then inclined and rotated. Under this procedure, known as 'shelling,' the plasma freezes in a layer on the inside wall of the container.

Rapid freezing is extremely important, for the lyophile or drying process aims at conversion with the least molecular rearrangement, and at 'fixing' of the original colloidal system.

This frozen plasma is then subjected to a high vacuum to remove the water vapor content without melting or softening the substance. This step is based on the principle that ice can be vaporized under high vacuum without passing through a liquid state.

Needless to say, during this step the high vacuum must be maintained throughout and removal of water vapors liberated must be provided for.

Vapor may be removed through the use of a condenser the bulb of which is immersed in a freezing mixture so that water is frozen as fast as the vacuum draws it from the drying plasma. The temperature of the plasma is gradually raised after most of the moisture has been removed, until it reaches 20 degrees centigrade or more. Dehydration is continued however, until the moisture content is less than one per cent.

Maintaining dried plasma under constant vacuum is best for preservation of sterility and maintenance of normal characteristics and for this reason the container is especially designed to maintain the desired vacuum after dehydration. The mouth of each container is sealed by insertion of a tight-fitting rubber stopper after the drying process is completed and without breaking the vacuum. Once this stopper is in place the vacuum used in the dehydration process is released, the container is removed from the apparatus and immediately flame-sealed.

After a suitable interval these containers are tested for adequate vacuum and all that are found defective are discarded. Samples of the finished lyophilized blood plasma are also tested for sterility and safety. Requirements of the National Institute of Health are thus fully met and the product is ready for use.

CHICAGO WELCOMES YOU!

Known first to Louis Joliet in 1673 — scene of Father Marquette's Indian Mission in 1674 — owned by France for 90 years, by Great Britain for the next two decades, and formally acquired by the United States in 1794 — location of Fort Dearborn in 1803 and the massacre of its garrison nine years later — a frontier village in 1833, an incorporated town in 1835, and a city in 1837 — destroyed by fire in 1871, to arise in new might and splendor and to give civilization in 1893 and 1933 its two most successful world fairs . . . Such is the Chicago that today stands proudly on 210 square miles of happy, prosperous activity as fourth largest city of the universe and recognized crossroads of American population, industry, agriculture and transportation.

No other city merely mentioned can arouse so many varieties of emotion. It has a fascination to the intelligent, and it has an earned glamour because its teeming expanse is not gross size but planned pattern, esthetic taste, inspired architecture.

A generation ago the late civic genius Burnham, father of Chicago's widely imitated "Chicago Plan," carved in memory the injunction to his

townsmen, "Make no little plans." An incredible grandeur, growing after his death, becomes Chicago's monument to him. People abroad do not hear much about that because its process is slow and its progress almost invisible. Chicago goes around the world and picks the best here, the finest there, improves upon them and builds.

The family of one of its celebrated public men, Clarence Buckingham, built in Chicago's Grant Park, a fountain of marvelous beauty. It is unquestionably the largest and most magnificent in the world, its nearest rival (which it somewhat resembles in design) being the Latona fountain, of the Louis XIV period, in the famous gardens at Versailles.

The Field Museum of Natural History was originally located in the Palace of Art, one of the most beautiful of the World's Columbian Exposition Buildings in Jackson Park. It has now put itself into a temple in Grant Park, where vast spaces are filled with treasures and knowledge gleaned from all parts of the world, covering both modern times and the long ages past, and provides a source of ideas, "local color," informa-

tion, and cultural enjoyment for all classes of people.

Chicago saw a planetarium called a world wonder, and constructed a better one, and incidentally, the first one in the United States. It has re-awakened interest in the science of astronomy and the knowledge of the heavens and Chicago has stepped into the forefront by its popular presentation at the Adler Planetarium.

Realizing the desirability of bringing to Chicago a representative collection of all American fishes, including those from salt water, a number of prominent civic leaders banded together and built an aquarium more marvelous than all others and it is known as the John G. Shedd Aquarium.

Its late first citizen, Julius Rosenwald, worked a score of years to find a way to depict to mankind man's industrial rise, and before his death he saw the last stone in place to preserve forever the beauty of the reconstructed Fine Arts building of the 1893 Columbian Exposition. The Museum of Science and Industry offers a presentation of scientific and engineering achievements where visitors can push buttons and pull levers to their hearts' content and see and hear the answer to the eternal question of the machine age, "How and why does it work?" It is a museum of the new age — an age in which things move.

Chicago is well represented in the world of art by the Art Institute, which ranks among the best galleries in the world. Its collections include historic and modern paintings in oil and water color, comprising a survey of all European periods from the primitives through the Renaissance, down to today. American painting, 18th, 19th, and 20th centuries. Galleries are arranged chronologically so that visitors may begin at the earliest period and follow through the development of painting to the present day.

It has on display Egyptian, Greek and Roman, Medieval, Renaissance and Modern sculpture. Blackstone Hall contains full scale reproductions of noted French cathedrals.

The decorative arts are not overlooked and one will find pottery, porcelain, period rooms, rugs and textiles of particular interest to the collector of antiques.

Space is dedicated to the Oriental arts where outstanding examples of Japanese, Chinese, Mohammedan and Indian art, sculpture and ceramics, paintings, textiles, bronzes and minor arts, as well as Japanese prints from the world's largest

collection can be seen.

Chicago boasts high rank in theatrical productions. People far and wide talk of its great motion picture houses with stage shows rivaling musical extravaganzas. In fact, Chicago is the setting for every known seasonal sport and diversion.

Sightseeing in Chicago is practically synonymous with a tour of the major parks — for in the parks are located many of those things for which the city has become famous. Parks which maintain scientific museums, zoos, conservatories, and public gardens, magnificent drives, beaches and recreation centers with intensively developed programs in hobby-crafts and the arts, as well as athletics. Probably no other city in the United States provides in its parks so many elaborate and varied facilities for indoor recreation.

Just south and west of Chicago's loop is located the Chicago Zoological Gardens, better known as the Brookfield Zoo. This is a 176 acre park housing not only a remarkably complete collection, but having the additional attraction of natural habitat arrangements for most animals, and the buildings have been constructed after the informal Italian farm style of the fifteenth century.

This Zoo has 2,286 animals and birds, including representatives from every continent — the most publicized being the two pandas.

Educational facilities are exceptional and diversified. The colleges and universities in and about Chicago make this area one of the great educational centers of the world. Whatever the interests or talents of the student may be he will find among the institutions located here many opportunities for their development under exceptionally favorable conditions. This is especially true of those students desiring education in the medical sciences. With her fine universities providing instruction in the basic sciences or pre-medical groundwork, her several first ranking medical schools, post-graduate schools and teaching hospitals, furnishing unparalleled opportunities for the more advanced work, Chicago is in a position to provide medical education unsurpassed in any city. The entire requirements for medical education from those of the earliest pre-medical student to those of the most advanced research worker are available in Chicago's teaching institutions.

Chicago is a city among cities. To all those who have not really seen Chicago, a wonder is waiting!



In NEW Chicago —

Above. — The famous lake front sky-line is more beautiful than ever with improvements in Grant Park completed. Right. — A view of Michigan Avenue looking North. The Wrigley Building, Tribune Tower and, in the distance, the Palmolive Building may be seen. Below. — If natural history interests you, you'll spend hours viewing the exhibits in the Field Museum.



THE HEADQUARTERS HOTEL



THE PALMER HOUSE — CHICAGO

All meetings of Sections, General Sessions, House of Delegates, and all exhibits, both technical and scientific, will be housed in this hotel.

OFFICIAL PROGRAM
OF THE
One Hundred First Annual Meeting
Illinois State Medical Society

PALMER HOUSE, CHICAGO

MAY 20, 21, 22, 1941



All Meetings On Daylight Saving Time

Annual Convention Number 101

ARE you becoming convention conscious? If you are not, take a glance at the programs arranged for our One Hundred and First Annual Convention. These programs provide extensive refresher courses in many of the specialties and for the man in general practice. They cover subjects which will materially assist any physician in bringing his medical knowledge strictly up to date.

If you have not considered the need of attending such a convention, just compile a list of the really big medical discoveries accomplished since you received your diploma, and ask yourself how many of them you have at your finger tips and understand sufficiently to put them to use in your daily practice. Do you know the last word about management of the aging heart? How would you treat hemolytic staphylococcus septicemia? Did you ever see an indirect inguinal hernia repaired thru a low midline incision? How do you use vitamin K in hypoprothrombinemia? Is your method of treating postmenopausal bleeding entirely modern and satisfactory? These are only a few of the many problems to be discussed in the joint meetings and sectional programs.

Medical science in its rapid progress keeps the alert physician forever on the jump. Relaxation means stagnation. To lose stride with your associates means antiquation. There is no better way for a physician to acquaint himself with modern methods than for him to visit with the men who are using the newer techniques. There is no better place to find such men than at a medical convention. The most thrilling thing about our profession is to see physicians both young and old gathered about some fellow practi-

tioner who has devised a new and better way to alleviate some human ailment. May it ever be thus. The modern and ambitious man attends conventions, the sluggard stays home.

The combined efforts of section officers and program committees have prepared a convention which progressive physicians cannot afford to miss. A painstaking tour of the exhibits, both scientific and technical, is a liberal education in itself. Post-convention clinics in Chicago hospitals will be outstanding.

Our Society's officers have not neglected the organization features of the convention. Committee meetings, conferences, reports of councilors and deliberations of the delegates will efficiently handle the administrative questions which present themselves.

Alumni luncheons, veterans meetings, fraternity gatherings, and just good old fashioned gab fests will adequately round out the social angle of our meeting. Don't leave your wife at home to bother about those telephone calls — bring her along, for her program will be as full as yours. When you register you will receive an invitation for her to attend a round of social activities which will keep her off your trail, so you will be free to visit with the boys.

The Chicago Medical Society, as host to the Convention wants you to come. Your Illinois State Medical Society wants you to come. Your patients want you to be progressive. Your system needs it and your standing in your profession demands it, so register at convention headquarters in the Palmer House May 20th and spend the week, being refreshed both scientifically and socially.

General Sessions

OPENING MEETING

Your attention is called this year to the unusually interesting programs which have been arranged, particularly those of the Joint Sessions. Every effort has been made to select subjects that will appeal to the general practitioner of medicine. The speakers are outstanding men from various parts of the United States and Canada.

The program for Thursday morning is fully as interesting as that for Wednesday morning. Since the hospitals will arrange clinics for Friday and Saturday, it is hoped that all members will plan not only to remain for the Joint Sessions on Thursday morning but also to stay over for the Thursday afternoon section meetings and for the clinics.

TUESDAY AFTERNOON, MAY 20, 1941

Grand Ballroom

- 1:00 Meeting officially opened by the President, James Scott Templeton, Pinckneyville.
Invocation — Rev. Theo. K. Vogler, Pastor of Byrn Mawr Community Church, Chicago.
Address of Welcome — Hon. Edward J. Kelly, Mayor of Chicago.
Address of Welcome — President, Chicago Medical Society, Frank F. Maple, Chicago.
Report of Chairman, Committee on Arrangements, H. Prather Saunders, Chicago.
Adjournment for scientific meetings.

TUESDAY EVENING, MAY 20, 1941

Grand Ballroom

- 8:00 Oration in Medicine —
"The Ageing Heart."
John H. Musser, Professor of Medicine, Tulane University School of Medicine, New Orleans, Louisiana.
9:00 Oration in Surgery —
"The Role of the Surgeon in the Management of the Peptic Ulcer Problem."
Owen H. Wangenstein, Professor of Surgery, University of Minnesota School of Medicine, Minneapolis, Minnesota.

WEDNESDAY AFTERNOON, MAY 21, 1941

Grand Ballroom

- 1:30 President's Address — "Organization and Medicine"
James Scott Templeton, President, Illinois State Medical Society, Pinckneyville.

THURSDAY MORNING, MAY 22, 1941

Private Dining Room 14

Induction of the President-Elect.

Immediately following the completion of the second session of the House of Delegates, the President-Elect, Charles H. Phifer, Chicago, will be inducted into the office of President of the Illinois State Medical Society by the retiring President, James S. Templeton.

All members and guests at the meeting are invited to attend this interesting function.

Joint Sessions

WEDNESDAY MORNING, MAY 21, 1941

Grand Ballroom

Joint session of Sections on Medicine; Surgery; Public Health and Hygiene; Radiology; Pediatrics; Obstetrics and Gynecology.

- 9:00 "Tuberculosis: Its Two Clinically Demonstrable Phases of Development."

C. A. Stewart, Minneapolis, Minnesota.

Two broad phases of development characterize the evolution of tuberculosis. All of the changes that result in the production of fibrotic and calcified primary lesions constitute the primary phase. The second or reinfection phase is represented by phthisis, osteo-articular tuberculosis, tuberculous meningitis, miliary tuberculosis and all of the other clinically serious forms of the disease that develop in different organs and parts of the body. The second phase develops solely in patients whose bodies harbor tuberculosis in its primary phase of development. The entire annual crop of patients with phthisis, miliary tuberculosis or other chemically serious forms of the disease is derived from the infected, tuberculin sensitive portion of the population. Consequently, initial infection with tubercle bacilli does not prevent tuberculosis.

- 9:30 "Anorexia Nervosa."

Ray F. Farquharson, Toronto, Canada.

This syndrome is characterized by morbid aversion to eating, amenorrhoea, emaciation, low basal metabolic rate, low blood sugar and low blood pressure. It occurs most typically in unstable adolescent girls. A wrong diagnosis of primary endocrine disease or chronic infection is commonly made and the syndrome aggravated by the attention paid to the physical state. Great improvement follows upon proper training and psychotherapy.

- 10:00 "The Eye Problems in Graves' Disease."

J. H. Means, Boston, Massachusetts.

In classic Graves' disease, thyrotoxicosis and ophthalmopathy vary together. That is to say, they get worse together and better together. There is an important subgroup, however, in which this does not hold. There may be eye signs and no clinical evidence of thyrotoxicosis or there may be severe ophthalmopathy with mild thyrotoxicosis. There may be progression of ophthalmopathy when the patient is actually myxedematous. The indication for treatment in this group is quite different from that in classic Graves' disease. How to recognize this type of case and the method of treatment will be discussed.

- 10:30 "Some Problems of the Biliary Tract."

I. S. Ravdin, Philadelphia, Pennsylvania.

Within the past decade considerable information has become available regarding the pathologic physiology of biliary tract disease. The relationship of cardiac abnormalities to biliary tract disease, diet in relation to liver injury and regeneration, hemorrhage, and a number of other problems are now more clearly understood and means are available of affecting certain abnormalities prior to operation. There will be a discussion of the means we are using to prepare our seriously ill biliary tract cases and a demonstration of the effect such preparation has had upon operative mortality.

- 11:00 "Diagnosis of Cancer of the Esophagus."

James B. Costen and W. T. K. Bryan, St. Louis, Missouri.

The differential diagnosis between carcinoma and other lesions of the esophagus is clear and errors are few, if barium x-ray study is combined with endoscopic examination and biopsy. The history of substernal distress or vague pains would be routinely expected but actually the first symptom in most cases is dysphagia. The disease is more common in men than in women, in the ratio of 6 to 1, and most frequent in the seventh decade, as shown by large series figures. Patients usually have symptoms at least six months before reporting for examination. The incidence of esophageal carcinoma was considered lowest of any part of the body until recently compiled records showed it to be fourth in frequency of all malignancies in men over 20 years of age (Adams). Typical cases will be presented showing carcinoma at various levels of the esophagus.

THURSDAY MORNING, MAY 22, 1941**Grand Ballroom****9:00 "Osteoporosis and Its Relation to Systemic Disease."**

John D. Camp, Rochester, Minnesota.

It will be the purpose of this discussion to emphasize the various causes of osteoporosis and the value of certain roentgenographic changes in the identification of disease of systemic origin. Particular attention will be given to recent observations concerning significant skeletal alterations in cases of dietary insufficiency and avitaminosis.

9:30 "Early Diagnosis of Malignant Tumors of the Female Genital Tract."

Frank R. Smith, New York City, New York.

A discussion of the early findings and the diagnostic factors to be considered. There will also be a discussion of the failure to increase the proportion of patients in the early stage of the disease to reach hospitals equipped for proper therapy.

10:00 "Some Problems of Water and Electrolyte Loss in Surgery."

Frederick A. Coller, Ann Arbor, Michigan.

Frequently surgeons care for patients who, because of operation or disease, cannot eat and drink. Their fluid and electrolyte needs must be cared for by parenteral feeding. Methods of doing so are outlined. Occasionally patients are dehydrated by their inability to eat or drink or because of abnormal losses of fluid from the gastro-intestinal tract. There are two main types of dehydration that are seen alone or in combination. These are discussed, with suggestions for their correction.

10:30 "Susceptibility to Paralysis in Poliomyelitis."

W. Lloyd Aycock, Boston, Massachusetts

The virus of poliomyelitis is widespread, the paralytic disease limited and selective in a manner which indicates factors in the host as a major determinant. The nature of some of these selectivities indicate that susceptibility may be due to an inherited, subclinical endocrinopathy residing in estrogenic hormones and affecting mucous membrane.

11:00 "Coronary Disease and The Doctor."

O. P. J. Falk, St. Louis, Missouri.

Accumulating evidence points to the possibility that certain of the atherosclerotic changes in coronary vessels of middle aged subjects may not be the result of a progressive irreversible deterioration, but may be an actual acquired disease of these arteries influenced by environmental factors. Physicians appear to be among the occupational groups especially vulnerable to coronary disease. This justifies a comprehensive survey of the living and working habits of the average physician and noting in what ways they may differ from what might be considered the ideal plan of life. As in so many chronic medical diseases, the best cure is prevention. Consideration of the recognized factors in the pathogenesis of coronary disease and their relation to possible prevention and control.

Section Programs**SECTION ON MEDICINE**

Willard O. Thompson Chairman
F. Garm Norbury Secretary

TUESDAY AFTERNOON, MAY 20, 1941**Grand Ballroom****2:30 "Rat-Bite and Haverhill Fevers."**

Tom Kirkwood, Lawrenceville; and C. G. Stoll, Sumner.

Fever following rat bite is usually due to one of two organisms: *Spirillum minus* or *Haverhillia multiformis*. Either infection may cause a serious and prolonged illness dangerous to life if unrecognized. Recent reports suggest that the clinical picture is clear enough in each disease to make an accurate bedside diagnosis possible where laboratory aid is not available. While these diseases are uncommon, treatment is remarkably effective, making it most important to recognize them.

2:50 "Pathological Anatomy of Aspiration Bronchopneumonia."

Carl Apfelbach, Chicago.

The gross and microscopic characteristics of acute alterations in the bronchi and lungs, due to the aspiration of regurgitated or vomited stomach content, are described. The essential changes are acute active hyperemia, edema, hemorrhage and slight polymorphonuclear exudation. The confirmation of this mode of development is accomplished through bacteriological examinations, identification of the gastric material in the bronchi and alveolar spaces, and by animal experimentation.

3:10 "Aspiration Pneumonia."

Ernest E. Irons, Chicago.

In persons who have been operated on for diseases involving the organs of the upper abdomen, and in those who suffer from medical conditions associated with coma or loss of reflexes, there occasionally develop symptoms which receive the diagnosis of bronchial pneumonia. A number of these are really due to the aspiration of stomach content and may be recognized pathologically with regularity, and clinically, in many instances. The pathologic picture is characteristic. The recognition of the possibility of occurrence of this condition suggests means by which it sometimes can be prevented.

3:30 "The Treatment of Hypertension with Potassium Sulfoeyanate."

Edward W. Cannady and Hollis N. Allen, East St. Louis.

Potassium sulfoeyanate was administered to a group of private patients having severe hypertension. Every patient was observed during a control period before the drug was administered. Frequent blood sulfoeyanate determinations were made. The results indicate that the drug may be used safely and effectively in office practice providing blood sulfoeyanate levels are used as a control.

3:50 "Recent Progress in Estrogen Therapy."

S. Charles Freed, Chicago.

A discussion of the newer estrogenic substances used for therapeutic purposes, including stilbestrol, hexestrol, estradiol dipropionate, and the recently devised estrone suspensions in oil and in water. The advantages of each preparation will be discussed and their therapeutic effects compared. An evaluation of the toxic reactions attributed to the synthetic estrogens will be made.

4:10 "Hemolytic Staphylococcus Septicemia."

A. G. Wolfe, Jacksonville.

A brief review of the literature on hemolytic staphylococcus septicemia, with report of the treatment applied in a small series of cases met with in the writer's general practice in a small hospital, and all occurring within one year's time.

4:30 "The Diagnosis of Carcinoma of the Colon."

James T. Case, Chicago.

The gross pathology, the clinical symptoms and the radiological signs of carcinoma of the colon are analyzed and correlated in an effort to find some means of earlier diagnosis. The technical details of the x-ray examination are mentioned briefly to show the possibility of detection of smaller and earlier lesions, provided the patients are referred at an earlier stage for the x-ray examination. A basis for earlier reference of potential colon carcinoma cases for x-ray study is suggested. A number of lantern slides will illustrate the paper.

(Discussion of papers only by properly executed forms.)

WEDNESDAY MORNING, MAY 21, 1941**Grand Ballroom**

Joint session with Sections on Surgery; Public Health and Hygiene; Radiology; Pediatrics; Obstetrics and Gynecology.

(For Complete Program, See Joint Sessions.)

WEDNESDAY AFTERNOON, MAY 21, 1941**Grand Ballroom****2:30 Chairman's Address — "Common Sense in the Practice of Medicine."**

Willard O. Thompson, Chicago.

2:50 "Recurring or Persistent Giant Urticaria (Angioneurotic Oedema)."

Ray F. Farquharson, Toronto, Canada.

In this disorder the itching may be distressing, change in appearance revolting and the persistency worrying. Commonly considered as an allergic manifestation, unsuccessful search for offending substances is usually pursued vigorously. In most cases, however, it follows upon and (or) is maintained by nervous or emotional strain.

Methods of diagnosis and successful treatment will be discussed.

3:10 "Theory and Prevention of Diabetes."

Rollin T. Woodyatt, Chicago.

The original Claude Bernard theory of overproduction. The von Mering and Minkowski theory of under-utilization. The recent revival of the Claude Bernard theory. Criticism and statement of the general problem today with suggestions as to possible future prevention.

3:30 "Observations on the Coronary Syndrome."

Hermon H. Cole, Springfield.

A discussion of the three main divisions of coronary pathology. There will be a brief history of coronary disease, anatomical and physiological observations with the clinical and prognostic implications. The present high incidence of the disease will be discussed. The paper will close with therapeutic studies as shown by the author's group of coronary cardiopaths.

3:50 "Sciatica."

A. Verbrugghen, Chicago.

Sciatica is a condition very frequently seen by the general practitioner. In some cases it is a very simple matter to relieve the patient, but in many cases the pain is intractable and leads to a great deal of distress to the patient, as well as economic loss. A great number of the intractable sciaticas are due to the herniated nucleus pulposus, which is a very common pathological condition. In the past there have been objections to the methods for establishing a diagnosis of a slipped disc, which have now been surmounted, and so it is now possible to relieve the condition without interfering in any way with the normal function of the back.

4:10 "Pathogenesis of Subacute Bacterial Endocarditis."

H. D. Palmer, Rockford.

The principal habitat and source of *Streptococcus Viridans* is the oral cavity. It is found in specially heavy growth in pyorrheal pockets and in periapical tooth infections. With the possible exception of the faucial tonsils, no other area in the body is nearly so heavily seeded. The teeth and tissues supporting them are subjected to natural and unnatural trauma. Case reports illustrating this portal of entry in bacterial endocarditis, together with bacteriologic studies are discussed.

4:30 "Hypertension and Its Relation to Unilateral Kidney Disease."

Budd C. Corbus and Budd C. Corbus, Jr., Chicago.

The necessity of considering the urological system in its entirety as related to the hypertensive state is a situation which merits intensive study. The association of persistent elevation of blood pressure and left ventricular hypertrophy in patients with urologic disease occurs far too frequently to be explained on a basis of mere coincidence. Hypertension would appear to be associated with urologic pathology often than is ordinarily believed.

THURSDAY MORNING, MAY 22, 1941

Grand Ballroom

Joint session with Sections on Surgery; Eye, Ear, Nose and Throat; Public Health and Hygiene, Radiology; Pediatrics; Obstetrics and Gynecology.

(For Complete Program, See Joint Sessions.)

THURSDAY AFTERNOON, MAY 22, 1941

Grand Ballroom

2:30 "The Treatment of Pneumonia."

William L. Winters, Wayne W. Fox and Reno Rosi, Chicago.

During the period of January 1939 to June 1940, 460 patients with pneumonia were studied and treated with sulfonamide therapy, at Cook County Hospital, Chicago. The intravenous administration of sodium sulfonamide was particularly stressed and found to be a safe, convenient and efficient therapeutic drug. It was used with no ill effects on 85 of the 354 sulfapyridine-treated patients who had pneumococcal pneumonia. The mortality was 8.8 per cent for the series, and after deducting those patients who died within twenty-four hours after admission, the mortality was 4.2 per cent for the non-bacteremic patients, and 9 per cent for those with bacteremia. Comparison is made with small groups that were treated with sulfathiazole, and with sulfapyridine and serum combined. An analysis of the effects of delay in treatment, age, extent of lung involvement, bacteremia, alcoholism, complications encountered, and the toxic reaction was made.

2:50 "Conservative Use of Artificial Pneumothorax."

George H. Vernon, Springfield.

Artificial pneumothorax along with other forms of collapse therapy has achieved widespread acceptance in the treatment of pulmonary tuberculosis. While management of such cases is fairly well standardized, there are still many controversial points. This paper outlines recent experience with a group of patients treated under conservative supervision in a small private sanatorium. Principles involved, choice of patients, general management, handling of complications and results to date are summarized.

3:10 "General Medicine in a Mental Hospital."

Erich Liebert, Elgin.

There is no branch of medicine at the present time which does not have a strong and close relationship to psychopathological and psychiatric work. This paper will discuss, by means of a large number of cases, the close connection which exists between various disciplines of medicine and the work which is being done in modern state hospitals. The increasing flow of patients into and out of the institution seems to warrant a closer collaboration between the institution and the private physician.

3:30 "Allergy to Therapeutic Substances."

Samuel M. Feinberg, Chicago.

In addition to the causes of allergy to which man is exposed by the air he breathes and the food he eats, modern medical therapeutics has added another potential source of allergens. The ever increasing numbers and use of injectable substances such as sera, vaccines, endocrine preparations, non-specific proteins and intravenous medication have resulted in an increasing incidence of allergic reactions. The old and the new drugs, such as aspirin, aminopyrine, quinine, barbiturates, arsphenamine, sulfanilamides and the ever widening field of chemotherapy, have also increased the problem of drug allergy. The paper discusses the types of medication causing allergy, the nature of the reactions and the means of avoiding them.

3:50 "The Diagnosis of Pulmonary Heart Disease (Cor. Pulmonale)."

Walter R. Tobin, Chicago.

Heart disease due to chronic pulmonary disease (Cor Pulmonale) is not uncommon but this diagnosis is infrequently made because this relationship has not been sufficiently emphasized. It is the purpose of this paper to emphasize the importance of this relationship and to describe the essential criteria for the recognition of this entity and its diagnosis. Typical case records exemplifying this condition will be presented with lantern slides.

SECTION ON SURGERY

Charles L. Patton Chairman
Loyal Davis Secretary

TUESDAY AFTERNOON, MAY 20, 1941

Private Dining Room 14

Joint session with Chicago Society of Industrial Medicine and Surgery.

2:30 "Fractures of the Lower Forearm and Wrist."

Richard J. Bennett, Jr., Chicago.

The paper represents a series of fractures of the lower radius and ulna and the carpal bones over a five year period, 1936-1940 inclusive.

The fractures have been classified according to site and the treatment has been based upon the age of the patient with relation to the normal experimental healing of the bone.

Certain fundamental facts are brought out in relation to the early diagnosis and treatment of fractures of the carpal bones and suggestions as to how to avoid missing fractures of the carpal bones and, furthermore, how to avoid non-union.

2:45 "The Immediate Care of Industrial Injuries."

Thomas C. Douglass, Chicago.

Following the lead of the recent trend toward the elimination of antiseptics in the care of wounds, a plan has been devised for the care of injuries in widely separated locations. This plan requires that all wounds which penetrate the skin be covered with sterile dressings immediately and the employee sent to our dispensary or to a hospital where cleansing and primary closure may be accomplished in the best possible manner. Burns are handled in a similar fashion.

Fractures are splinted where they occur and are then transported by car or ambulance to the hospital for care.

3:00 "Blood Transfusion Reactions, their Causes and Prevention."

Leo M. Zimmerman, Harold Laufman and Anna Marie Strauss, Chicago.

An analysis is made of four series, each of 500 blood transfusions, demonstrating the reduction in the incidence of reactions as the several causative factors are eliminated. The organization of a Transfusion Department under unified responsibility is important. An adequate system of checks and counter-checks is described, together with record forms for the careful evaluation of the post-transfusion course. The value of the test for pyrogenic substances in determining the cause of reactions is emphasized.

3:15 "Bone Pain."

Graham Kernwein, Chicago.

The nerves supplying the skin are so educated that injuries to them are accurately located. Painful irritation of the viscera, however, finds expression not necessarily over the site of the organ but often in a remote painful area of the skin. The prevailing theory is that proposed by Ross and supported by Head. It describes two types of pain; splanchnic or visceral, and somatic or referred. Misinterpretation of referred pain in the abdomen results in many unnecessary operations, a fact often stressed. Diseases of bone may cause somatic pain, resulting in misinterpretation and unnecessary operation, a fact generally overlooked.

A series of illustrative cases will be presented.

3:30 "Fractures About the Elbow."

James J. Callahan, Chicago.

The elbow is the only true hinged joint in the skeleton. Thus injuries to any of the three bones that enter into the formation of this joint frequently cause deformities and disabilities.

The elbow is accessible to direct and indirect trauma, thus resulting in varied and complicated fractures. An attempt will be made by illustration to review some of the most common types of fractures, and to discuss in detail the various forms of treatment.

3:45 "The Use of Injections for the Relief of Peripheral Pain and Other Conditions."

Frederick W. Slobe, Chicago.

Since treatment of the remote cause of various painful affections of muscles, fascias, ligaments, and nerves is often unsatisfactory, local therapeutic injections are often of distinct benefit. Some of the prolonged acting anesthetics and some of the volatile preparations are especially useful for this purpose. This has a rather wide range of applicability in low back pain and includes the use of paravertebral injections in certain instances. The use of injections for the relief of severe intercostal neuralgia is often of marked benefit. Temporary blocking of the abdominal sympathetic ganglia by paravertebral injections seems to afford definite improvement in some cases of thrombophlebitis. Direct injection of various agents into local areas of fibrositis in various parts of the body is of frequent value in eliminating reflex pains referred to other areas.

4:00 "Repair of Indirect Inguinal Hernia Through Low Midline Incision."

W. Kenneth Jennings, Evanston, and Barry Anson, Chicago.

Hendrey recently reported a case of femoral hernia repaired after exposure of the femoral ring through a low midline incision. He separated the peritoneum from the rectus muscle and retracted the muscle laterally to obtain excellent exposure of the femoral canal without entering the peritoneal cavity and without injury to the abdominal wall in the inguinal sector. Anatomic studies have shown that the abdominal inguinal ring can likewise be exposed by this same technic. Inasmuch as the great majority of recurrent inguinal herniae are in reality incisional herniae, it was reasoned that if an indirect inguinal hernia could be removed and the abdominal inguinal ring closed without traumatizing the inguinal wall, the risk of recurrence of the hernia should be minimal. Accordingly a technic was devised in which Hendrey's approach was used. The indirect hernial sac was delivered from the canal from behind (posterior to the transversalis fascia) as is illustrated in the drawings. After removal of the sac the abdominal inguinal ring was covered by transversalis fascia and muscle fibers, using two or three interrupted silk sutures. The midline incision is then closed. Eight patients have been operated upon to date; three were operated one year ago, one eleven months, one nine months and the last three within the last six months. All have been carefully followed and as yet there have been no recurrences. This procedure is recommended for consideration in cases of indirect inguinal hernia where no previous injection therapy has been attempted.

WEDNESDAY MORNING, MAY 21, 1941 Grand Ballroom

Joint session with Sections on Medicine; Public Health and Hygiene; Radiology; Pediatrics; Obstetrics and Gynecology.

(For Complete Program, See Joint Sessions.)

WEDNESDAY AFTERNOON, MAY 21, 1941 Private Dining Room 14

2:30 "The Role of the Peritoneoscopy in Abdominal Surgery."

J. C. Thomas Rogers, Urbana.

Direct visualization of the abdominal cavity by means of the introduction of a small instrument through a tiny incision very frequently gives sufficient information to forestall more radical surgery. This diagnostic procedure is sufficiently safe to be added to the armamentarium of the experienced abdominal surgeon. Indications and contra-indications along with technic is also presented.

2:45 "Acute Perforation of Gastric and Duodenal Ulcer."

(An analysis of 200 consecutive cases.)

John B. O'Donoghue and Maurice B. Jacobs, Chicago.

From a study of 200 consecutive operated cases of acute perforation of gastric and duodenal ulcers observed at the Cook County Hospital from January 1, 1935 to June 1, 1937; an analysis of sex, race, and age incidence are made; also the past ulcer histories and the previous surgical treatment some of this series had undergone.

The symptomatology, physical examination, and laboratory findings are analyzed; also the type and location of the perforation revealed at operation.

The relationship of the perforation to the mortality rate is correlated with the time interval elapsing, operative procedure, and type of perforation found.

In conclusion: The immediate postoperative treatment and course are considered.

3:00 "Surgical Treatment of Carcinoma of the Rectum."

R. K. Gilchrist, Chicago.

This is a discussion of the value of the usual prognostic signs; age of patient, the size of tumor, the duration of symptoms, grading of tumor, and the presence of palpable lymph nodes in cancer of the large bowel. The incidence and extent of lymphatic metastases in 150 specimens of carcinoma of the colon are demonstrated and the general principles of surgical treatment, as influenced by these findings, are discussed.

3:15 "Congenital Hemolytic Jaundice."

Charles D. Branch, Peoria.

Haden has shown that spherical red blood cells are alone responsible for the fragility changes seen in the blood of these individuals. Krumbhaar therefore suggests the name spherocytic jaundice. Five cases of spherocytic jaundice are reported. The patients are members of the same family. All in this group had the characteristic finding of a chronic variable jaundice, splenomegaly and spherical red cells. The operative findings and pathological descriptions are presented. The treatment of spherocytic jaundice is discussed.

3:30 "Factors Influencing the End Results of Surgery for Duodenal Ulcer."

J. R. Buchbinder, Chicago.

The indications for surgery in duodenal ulcer are no longer a matter for debate. In this country there is a steadily decreasing difference of surgical opinion relative to the most satisfactory operative procedure. Gastro-enterostomy, simple excision, and pyloroplasty are steadily giving way to wide gastric resection. Recurrence and marginal ulceration follow in large percentages in young individuals, cases with high acid, bleeding, penetration, and long-standing intractability where gastro-enterostomy is performed. Sharp reduction in acidity and rapid emptying are essential for permanent relief and are not assured by conservative operative procedures. Certain points pertaining to technic are of utmost importance for satisfactory end results.

3:45 "Volvulus of the Cecum and Torsion of its Mesentery."

R. M. Norris, Jacksonville.

A brief review of the literature relating to the incidence and etiological and embryological factors in the production of the cecum and torsion of its mesentery. Report of case

which occurred during pregnancy in which the uterus was the primary factor in producing the volvulus. Outline of treatment employed.

4:00 "Granulomatus Lesions of the Ileo-Cecal Region."

Foster L. McMillan, Chicago

Granulomatous lesions of the ileocecal region may be divided into two main groups: specific and non-specific. The specific granulomas produced by tuberculosis, actinomycosis, and amoebiasis are reviewed with illustrations. The non-specific granulomas of this region are likewise reviewed and illustrated with particular attention given to regional enteritis and its different phases.

4:15 "Surgery of the Aged."

E. Lee Strohl, Chicago.

Within the past thirty years pediatrics has been elevated to a highly developed scientific and economically important specialty. On the contrary, geriatrics has been allowed to lag.

In 1850, 2.6% of the inhabitants of the United States were over 65. In 1931, 5.4% of the inhabitants of the United States were over 65. Factors to account for this shift include (1) a better knowledge of physiology, physiological chemistry, pathology, and surgical technic, and (2) development of anesthesia and methods of antisepsis.

These ideas are developed and a survey of the accepted means of determining poor surgical risks is included. A few case reports illustrative of certain fundamental points are included.

THURSDAY MORNING, MAY 22, 1941

Grand Ballroom

Joint session with Sections on Medicine; Eye, Ear, Nose and Throat; Public Health and Hygiene; Radiology; Pediatrics; Obstetrics and Gynecology.

(For Complete Program, See Joint Sessions.)

THURSDAY AFTERNOON, MAY 22, 1941

Grand Ballroom

The program of this session will be devoted to the demonstration of patients and methods, and emphasis will be placed on clinical presentations.

2:00 "Physiological Problems in Suction Drainage of the Gastro-Intestinal Tract." (An actual demonstration of how this is done)

John L. Lindquist, Chicago.

Constant suction drainage of the gastro-intestinal tract for prolonged periods is often necessary. It should be borne in mind that this drainage accomplishes only one thing, relief of distention. At the same time prolonged drainage creates or exaggerates certain abnormal physiological states which may become as serious as distention. With the tube in place intake and absorption from the gastro-intestinal tract are hindered and the actual loss of water, minerals, and nutritive elements may be much greater than would occur without drainage. The management of these problems on the Surgery III Service of St. Luke's Hospital is discussed. Slides to illustrate the clinical water balance sheet used and the treatment of negative fluid balance with special consideration to renal disease and serum protein deficiency are included. The practical evaluation of the patient's status with reference to water, mineral, and nutrition balance is considered. The practical laboratory tests which are helpful are discussed. The actual hospital management is illustrated by a case of pyloric obstruction in which gastro-enterostomy was done. The stoma closed on the ninth postoperative day necessitating prolonged gastric drainage. Blood chemistry studies and the fluid balance sheet indicate the patient's condition and the effect of physiologic management.

2:15 "Treatment of Burns." (Use of non-adherent dressings)

Demonstration of patients.

Harvey S. Allen, Chicago.

At the Children's Hospital of the Cook County Hospital, between one hundred twenty to one hundred fifty burned patients are seen each year. During the past two years all burns have been treated with a non-adherent type of dressing.

The burns are considered as large open surgical wounds and are treated with the same principles as are applied to any open wound. The value of cleanly care, closure of the burned area with non-adherent dressing, splinting, and early grafting is shown in the steadily diminishing mortality rate.

2:30 "Prolongation of Survival Time in Mann-Williamson Dogs by Supplementing Diet with Amino Acids."

Samuel J. Fogelson, Chicago.

In our laboratories the average survival time for internal duodenal drainage or Exalto-Mann-Williamson dogs on a basal diet supplemented with casein was one hundred plus days. Another series of these animals were placed on the same basal diet but received a supplement of a preparation containing all the essential amino acids in amounts which were nitrogen equivalent to the casein supplement of the first series. In this second series the average survival time was two hundred plus days. This permitted the conclusion that improved nutrition with ease of assimilation of diet are significant factors in experimental ulcer.

2:45 "Paravertebral Alcohol Injection for Relief of Cardiac Pain." Demonstration of patients.

Samuel Perlow, Chicago.

Since 1916 numerous surgical procedures involving the autonomic nervous system have been advocated for the relief of cardiac pain, especially those severe cases of angina pectoris not relieved by medical measures. Chemical destruction of the sympathetic pathways from the heart by means of paravertebral alcohol injection has given either complete or partial relief to 75% of cases of angina pectoris so treated.

3:00 "Varicose Veins and their Complications." Motion picture.

Richard E. Heller, Chicago.

This paper covers the modern concepts of the pathological anatomy and physiology of varicose veins and their complications. New information is presented regarding the circulation in varicosities. A synopsis of the treatment is given. The healing of varicose ulcers has been studied to establish a standard healing curve by which to judge newer modes of therapy.

3:15 "Spontaneous Hemorrhage into the Rectus Sheath."

Everett P. Coleman and D. A. Bennett, Canton.

Spontaneous hemorrhage into the rectus sheath is of relatively rare occurrence. It has been reported in only a few instances, but when it does occur it produces symptoms of a confusing nature and may be mistaken for strangulated hernia or other conditions suggesting a surgical emergency. A review of the literature is given, the pathology is discussed, and one additional case is reported.

3:30 "Vitamin K in Hypoprothrombinemia."

John E. Karabin, Winnetka.

Synthetic compounds with vitamin K activity used orally and parenterally are effective in surgical patients with hypoprothrombinemia. Hypoprothrombinemia may occur with or without jaundice, with or without bleeding, and no definite relationship between the degree and duration of jaundice may be made.

Dangerous levels may occur in biliary tract, hepatic or gastro-intestinal disease. Postoperatively the 4th to the 7th day is the critical period when the plasma prothrombin may reach a dangerous level.

The average dose of vitamin K is 1-3 mgs. daily, orally or parenterally. When oral therapy is used it is necessary that bile salts are present in the intestinal tract to insure absorption of the oil soluble vitamin.

The dosage will vary with the individual and will depend upon repeated prothrombin determinations. Clinically patients with severe damage of the liver did not give as good a response to the vitamin K compounds or maintain the level of plasma prothrombin as well as patients with relatively good liver function.

3:45 "Radium Treatment of Carcinoma of the Tongue." Motion picture.

Frank E. Simpson, J. Ernest Breed and James E. Thompson, Chicago.

Methods of using radium are (1) surface irradiation, and (2) radium puncture.

Surface irradiation is successful in small, radiosensitive lesions only. Radium puncture must be used as adjunct.

Methods: (1) Temporary radium or radon needles. These are removed after dose has been given. We have long since abandoned their use. (2) Permanent radon "seeds." These may be made of glass, gold, lead, etc. We use lead radon "seeds" which we devised in 1930.

Radium treatment of metastases: Surgery combined with radiation is method of choice. Report of 56 cases.

SECTION ON EYE, EAR, NOSE AND THROAT

Thomas D. Allen Chairman
Clifton S. Turner Secretary

TUESDAY MORNING, MAY 20, 1941 Crystal Room

9:00 "Endoscopy in the Diagnosis of Diseases of the Chest."

Stanton A. Friedberg, Chicago.

Bronchoscopy and esophagoscopy are no longer procedures confined merely to the removal of foreign bodies from the air and food passages. The rapid and efficient progress made by thoracic surgeons in recent years carries an added necessity for the early diagnosis of such previously considered hopeless conditions as pulmonary and esophageal carcinoma. A series of lantern slides will be presented to illustrate the important and indispensable role of endoscopy in the diagnosis and treatment of chest diseases.

Discussion opened by John M. Dorsey, Chicago.

9:30 "The Treatment of Hereditary Glaucoma." Walter Ackerman, Chicago.

The treatment of glaucoma is a veritable Scylla and Charybdis in ophthalmology. On the one hand we have enthusiasts for medical treatment only. On the other hand we have enthusiasts for surgical treatment.

The present study shows the necessity of pursuing a middle course in individualizing and of making a thorough study of each individual case. The earlier that treatment is started the better; this means a thorough study of all members of the family.

Discussion opened by Samuel J. Meyer, Chicago.

10:00 "Vasomotor Rhinitis: A Physiologic and Pathogenetic Basis for Therapy." Louis Zolo Fishman, Chicago.

The cases selected for treatment are non-suppurative, perennial types, which include those of allergic, psychoneurotic and possibly endocrine origin, and especially exclude seasonal (Hay Fever) cases. Successful results are independent of degenerative changes of the nasal mucosa. Relief of sneezing (hyperesthesia), hypersecretion (rhinorrhea) and nasal blockage (intumescence) is experienced within a few days and is of considerable but variable duration. Though this form of therapy is empirical in the sense that it disregards etiologic factors, its effectiveness is readily evaluated on the basis of physiologic facts. The apparatus consists of cotton, a firm metal applicator, and a solution of 5 percent cocaine hydrochloride. The procedure is harmless.

Discussion opened by Samuel J. Pearlman, Chicago.

10:30 "Squint and Amblyopia; A Plea for their Early Treatment." Hallard Beard, Chicago.

The more important methods in the treatment of squint and its attending weakness of sight are: Surgery of the ocular muscles, the fitting of glasses, orthoptic exercises and occlusions.

Many or all of these are commonly neglected in their application to cross-eyed children, due to some prevalent, erroneous conceptions of squint on the part of general practitioners. The importance of instituting treatment in the first two or three years of life is stressed.

Discussion opened by W. A. McNichols, Dixon.

11:00 "Conservative Management of the Sinuses." Louis T. Curry, Chicago.

Cooperation with the tendency of less sinus surgery is urged. Basic physiological, anatomical and pathological considerations of the nose and accessory sinuses are reviewed.

Fundamentals for diagnosis of sinus disease are outlined and conservative treatment is discussed.

With more universal standards of diagnosis and with fewer major sinus operations the confidence of the general practitioner and the public may be elevated.

Discussion opened by R. W. Watkins, Chicago.

11:30 Chairman's Address. Thomas D. Allen, Chicago.

TUESDAY AFTERNOON, MAY 20, 1941 Crystal Room

2:00-5:00

SYMPOSIUM ON NUTRITION Beulah Cushman, Chairman, Chicago

"Physiological Aspects of Normal Nutrition as Related to Eyes, Ears, Nose and Throat."
Smith Freeman, Department of Physiology, Northwestern University, Chicago.

"Effect of Pathological Processes on Nutritional Requirements."
Clifford Barborka, Department of Internal Medicine, Northwestern University, Chicago.

"Clinical Aspects of Vitamin Deficiencies in the Ear, Nose and Throat."
Linden Wallner, Rush Medical College, Chicago.

"Clinical Aspects of Vitamin Deficiencies in the Eye."
Peter Kronfeld, Dean, Illinois Eye, Ear Infirmary, Chicago.

"Problems in Nutrition as Result of Allergy."
Helen Hayden, Children's Memorial Hospital, Chicago.

TUESDAY EVENING, MAY 20, 1941 Crystal Room

6:00 Annual Banquet of the Section.
"Progress in Color Photography."
C. O. Schneider, Chicago.

WEDNESDAY MORNING, MAY 21, 1941 Crystal Room

9:00 "Ophthalmology Under Field Conditions." Roland I. Pritikin, Chicago.

The author describes the organization of the ophthalmic service of a field force and care of eye injuries at the place of injury, and subsequently. Problems of ophthalmic service in the field, administration, staff relationship, hospitalizations and evacuations of ophthalmic casualties, equipment and supply are discussed. Hygiene, first aid and treatment in the theater of operations, with emphasis on preventive treatment and measures against trachoma and dust is described. Movies of ophthalmic surgery on a large scale under field conditions in India are shown.

Discussion opened by E. Mann Hartlett, Evanston.

9:30 "Laryngo-tracheobronchitis." Charles D. Sneller, Peoria.

The very grave disease of the tracheobronchial tree, acute tracheobronchitis or laryngotracheobronchitis, still offers a considerable challenge to our therapeutic ability. Its earliest possible recognition and the immediate institution of treatment both surgical and medical seems, at present, the most valuable means of controlling this disease.

Discussion opened by Paul H. Hollinger, Chicago.

10:00 "Non Industrial Eye Injuries." Hiram J. Smith and H. V. Wadsworth, Chicago.

We will call attention to the fact that industrial eye injuries follow rather definite patterns: and prevention of industrial injuries is therefore reasonably successful.

The authors will attempt to show that non-industrial eye injuries do not follow any definite pattern. Four unusual cases are reported. Prevention of non-industrial injuries is much more difficult, but can be effected to some extent through education.

Discussion opened by Herman P. Davidson, Chicago.

10:30 "Invasion of the Venous Sinuses from Suppuration in the Middle Ear Cell System." John R. Lindsay, Chicago.

The spread of otitic suppuration to the venous sinuses bordering on the temporal bone has always carried a fairly

high mortality even with the best known surgical treatment.

The objective of this paper is to present new material both clinical and pathological, which provides some of the explanations for failure in diagnosis and treatment. The material includes several examples of spread from the petrous pyramid to the petrosal sinuses with and without jugular bulb or sigmoid sinus thrombosis, also localized cisternal meningitis and extension to the superior sagittal sinus.

Several cases will be presented to illustrate the relative place of chemotherapy and surgery in treatment of this complication.

Discussion opened by Alfred Lewy, Chicago.

11:00 "Presbyopia."

Ralph H. Woods, LaSalle.

Accommodative insufficiency may occur in childhood, youth, adolescence, as well as in senility.

Amplitude of accommodations should be measured in every case before cycloplegic is used.

Methods of measurement, tape measure, Prince rule, Ampliometer.

Presbyopic comfort depends on two primary factors: (1) One diopter reserve accommodation, (2) Scales centered nasally to secure synkinesis.

Ampliometer as aid in securing presbyopic correction and determining reserve convergence.

Discussion opened by A. H. Pember, Janesville, Wisconsin.

11:30 Business Meeting.

WEDNESDAY AFTERNOON, MAY 21, 1941

Crystal Room

INSTRUCTION COURSES

Ophthalmology.

2:00 "Information Please — Cataract Surgery."

Watson W. Gailey, Bloomington.

Walter Stevenson, Quincy.

Samuel J. Meyer, Chicago.

Frank W. Brodrick, Sterling.

3:30 "Neuro-ophthalmology."

Max M. Jacobson, Chicago.

Neuro-perimetry, a subdivision of Neuro-ophthalmology, will be presented in essential detail; a complete necessary reference list will be given; its importance as a "connecting link" between Neurology, Ophthalmology, Neuro-surgery and Internal Medicine will be shown. A careful analysis of the anatomy of the central visual pathways, its anatomical relations and localization of the constituent nerve fibers will be discussed, aided by the projection of pictures and diagrams. The clinical application of the knowledge of the anatomy of the central visual pathways will be presented. Certain localizing phenomena of cerebral import will be considered.

The anatomy of, lesions of, and examination of the pupillo-motor pathways will be discussed.

Private Dining Room 11

Otolaryngology.

2:00 "Panel Discussion on Tumors of the Head and Neck."

The Joseph C. Beck Head and Neck Tumor Group — Chief Consultants: Joseph C. Beck and Frank Novak, Jr., Division of Otolaryngology; L. Benno Bernheimer and Stanton A. Friedberg; Division of Ophthalmology: Harry S. Gradle and Samuel J. Meyer; Division of Neuro-surgery: Eric Oldberg; Division of Oral and Plastic Surgery: Frederick W. Merrifield and Frank F. Kanthak; Division of Radiotherapy: Henry L. Jaffe and Robert S. Landauer (Consulting physicist); Division of Pathology: Frank B. Queen and Donald Manshardt.

There will be a panel discussion on tumors of the head and neck with particular emphasis on questions from the floor. Brief introductory presentations will deal with problems of ophthalmology, otolaryngology, oral and plastic surgery and radiotherapy. It is expected that participation from the floor will constitute an important phase of the program.

3:30 "Nose and Throat Diseases Related to Various Lesions of the Eye."

James B. Costen, St. Louis, Missouri.

Accepting the preponderance of opinion against the relationship of sinus disease to retrobulbar neuritis, there still remains a most important relationship between foci in sinuses and lymphoid tissue of the throat, to retinal lesions, choroiditis, and uveitis. Favorable results will be shown in a few cases of retrobulbar neuritis after sinus surgery. One case will be presented, showing only marked allergy, polyposis about the ethmoids and no infection, improvement of a hemorrhagic retinitis beginning after sinus surgery.

The coincidence of abnormal variation in sphenoidal cell structure and of headache in the majority of these eye cases will be illustrated.

THURSDAY MORNING, MAY 22, 1941

Grand Ballroom

Joint session with Sections on Medicine; Surgery; Public Health and Hygiene; Radiology; Pediatrics; Obstetrics and Gynecology.

(For Complete Program, See Joint Sessions.)

SECTION ON PUBLIC HEALTH AND HYGIENE

N. O. Gunderson Chairman
Walter C. Earle Secretary

TUESDAY AFTERNOON, MAY 20, 1941

Private Dining Room 18

2:30 "Schick Test."

Henry Niblack and Israel Appelbaum, Chicago.

2:50 "Tuberculin Test."

Sol Rosenthal, Chicago.

3:10 "Dick Test."

Gladys Dick, Chicago.

These tests are being used more widely by the general practitioner. Many questions arise in the proper technic of giving the test and interpreting the results that occur. All of these points will be adequately demonstrated.

3:30 "The Significance of the Negri Body in the Diagnosis and Epidemiology of Rabies."

Harald Johnson, Montgomery, Alabama.

It is a well known fact that Negri bodies are not always demonstrable in the brains of man and animals dying of rabies. In an effort to determine the expected error in microscopic diagnosis a large number of brain specimens from naturally and experimentally infected animals have been studied by microscopic examination and mouse inoculation. This study has brought out some interesting data concerning the factors influencing the production of Negri bodies and the role of the Negri negative animal in the epidemiology of rabies.

Discussion opened by H. J. Shaughnessy, PH.D., Chicago.

4:00 "Technics in Syphilis, Diagnosis and Treatment."

G. G. Taylor, Chicago.

The general practitioner is called upon by law and in routine practice to draw blood for serological tests, often from individuals whose veins make the procedure difficult. In the follow-up of infants from syphilitic mothers repeated tests must be made and the drawing of blood often requires special technics. Those individuals with syphilis must be treated. A demonstration will be given of the technics of service in the drawing of blood and the satisfactory administration of arsenic and bismuth.

WEDNESDAY MORNING, MAY 21, 1941

Grand Ballroom

Joint session with Sections on Medicine; Surgery; Radiology; Pediatrics; Obstetrics and Gynecology.

(For Complete Program, See Joint Sessions.)

WEDNESDAY AFTERNOON, MAY 21, 1941**Private Dining Room 18****2:30 "Cancer Control in Illinois."**

R. V. Brokaw, Chicago.

From the standpoint of national economy, the control of cancer is a major public health problem. By an intelligent application of the knowledge now possessed cancer can to an appreciable extent be controlled.

In the practice of medicine, early diagnosis and correct treatment are the important factors of cancer control. Tumor clinics in local general hospitals provide the most effective means of service both to physicians and patients.

For the individual, the control of cancer demands the maintenance of normal body functions, the recognition of early signs of cancer, and the prompt seeking of medical advice regarding suspicious symptoms.

Discussion opened by Eric Uhlman, Chicago and Roswell T. Pettit, Ottawa.

3:00 "Are Present Quarantine Regulations Archaic?"

Archibald Hoyne, Chicago.

In this discussion a sharp distinction is made between the quarantine of premises and the isolation of patients in the home. In many instances quarantine regulations recently in force have proved to be of little or no value in the control of epidemics.

The necessity for adequate isolation of contagious disease patients is emphasized. Today the general public possesses the knowledge to appreciate the value of proper safeguards. A plea is made for reasonable and uniform quarantine regulations which would be acceptable to all states.

Discussion opened by Winston H. Tucker, Evanston.

3:30 "The Epidemiology of the Manteno State Hospital Typhoid Fever Epidemic."

C. Milton Eberhart, Chicago.

During the months of July through October 1939 an epidemic of typhoid fever at Manteno State Hospital involved 411 persons residing at that institution and 42 other persons living elsewhere in the state. Engineering studies showed the presence of sewer leakage and actual passage of contaminated material through the creviced limestone to two of the institution wells. *E. typhi* was isolated from the raw water of one of these wells. These results indicated a water-borne transmission of the infecting organism and epidemiological studies confirmed this point. Careful attention to the collection and examination of release specimens of feces and urine resulted in the discovery of the highest percentage of carriers every reported.

Discussion opened by John P. Walsh, Chicago.

4:00 "The Five Day Treatment for Early Syphilis."

Herbert Rattner, Chicago.

This is a report of the results obtained with the five day intensive treatment for early syphilis at the Cook County Hospital. The experiment has been in effect for less than a year so that final evaluations cannot yet be made. About one hundred fifty patients have been treated thus far, all of whom have shown clinical evidence of primary or secondary syphilis. Mapharsen has been employed by means of the intravenous drip method. The technic is described, the early reactions enumerated and the clinical results obtained in the first seventy-five cases are recorded. Some interesting case studies are recited and the significance of the new treatment in regard to public health is discussed.

Discussion opened by Herman Soloway, Springfield.

THURSDAY MORNING, MAY 22, 1941**Grand Ballroom**

Joint session with Sections on Medicine; Surgery; Eye, Ear, Nose and Throat; Radiology; Pediatrics; Obstetrics and Gynecology.

(For Complete Program, See Joint Sessions.)

SECTION ON RADIOLOGY

Harry W. Ackemann Chairman
Earl E. Barth Secretary

TUESDAY AFTERNOON, MAY 20, 1941**Private Dining Room 9****2:30 "Tumors Occurring in the Apex of the Lung."**

Justin I. Stein, Hines.

Although many articles concerning carcinoma of the lung have recently appeared in the literature, there has been little consideration accorded tumors situated in the apex. The clinical radiological and pathological features of apical tumors will be presented as well as a resume of the literature and the author's experience with a large group of cases. Lantern slides will be shown.

Discussion opened by T. J. Wachowski, Chicago.

2:50 "Roentgenographic Considerations of Some Aspects of Chronic Mastoiditis with Special Reference to Cholesteatoma."

John H. Gilmore and L. D. Urban, Chicago.

1. What is chronic mastoiditis?
2. Post-inflammatory changes in mastoid structures.
 - a. Sclerosis — various degrees.
 - b. The undeveloped mastoid — considerations.
 - c. Acute infection superimposed on chronic.
3. Localized pathologic change in the mastoid process.
 - a. Chronic abscess formation.
4. Cholesteatoma
 - a. Pathology and complications.
 - b. Symptoms.
- c. Roentgenographic evidence of:
 1. Classical.
 2. Obscure in lateral position.
 3. Use of the Chamberlain-Towne position.

Discussion opened by Fred H. Decker, Peoria.

3:10 "Diagnostic Value of the Plain (Scout) Film of the Abdomen in Acute Conditions."

Wm. DeHollander, Springfield.

A brief discussion of the use of the plain film of the abdomen in aiding diagnosis in acute and subacute diseases of the abdomen, such as obstruction, ileus, foreign bodies, calculi in ureter, perforation of gastro-intestinal tract.

Discussion opened by E. R. Crowder, Evanston.

3:30 "The Role of the Roentgenologist in the Treatment of Fractures."

Ralph G. Willy, Chicago.

The radiologist, as medicine is practiced today, is the consultant in most fractures. He is responsible for the diagnosis and frequently for the end result. He must recognize the capabilities of the referring physician, and may have to insist upon a competent orthopedic surgeon being called in on consultation. He is in a position to suggest or demand frequent check-up examinations. At the same time he must give all available information by films made in various standard or unusual positions.

Discussion opened by Cesare Gianturco, Urbana.

3:50 "Film Reading Session."

Hollis Potter, Chairman, Chicago.

This session is open to all members of the state society. The officers of the Section on Radiology are anxious to have as many members of the society as possible participate. Anyone wishing to present interesting and unusual roentgenograms should communicate with the secretary of the section.

5:00 Fellowship Hour.

Courtesy of Chicago Roentgen Society.

6:00 Radiological Dinner.

Business meeting and election of officers.

WEDNESDAY MORNING, MAY 21, 1941**Grand Ballroom**

Joint session with Sections on Medicine; Surgery; Public Health and Hygiene; Pediatrics; Obstetrics and Gynecology.

(For Complete Program, See Joint Sessions.)

THURSDAY MORNING, MAY 22, 1941**Grand Ballroom**

Joint Session with Sections on Medicine; Surgery; Eye, Ear, Nose and Throat; Public Health and Hygiene; Pediatrics; Obstetrics and Gynecology.
(For Complete Program, See Joint Sessions.)

SECTION ON PEDIATRICS

Orville E. Barbour Chairman
Craig D. Butler Secretary

TUESDAY MORNING, MAY 20, 1941**Private Dining Room 17**

9:30 "Comments on the Early Diagnosis and Treatment of Anterior Poliomyelitis."
Arthur J. Fletcher, Danville.

This paper reviews the recent literature on the controversial points of the etiology and on the management of anterior poliomyelitis, including the experimental work sponsored by the National Foundation for Infantile Paralysis. The author then discusses his own experiences, stressing the importance of careful examination and painstaking histories in differentiating various meningeal irritations.

Discussion opened by A. Levinson, Chicago.

"Observations on Pneumonia in Infants."
Joseph Greengard, Chicago.

An analysis is presented of a series of 200 primary pneumonias in infants under 1 year of age treated in the Children's Division of Cook County Hospital. In this group routine sputum typings were done and the therapy employed was sulfathiazole usually alone but at times in combination with specific serum. The clinical picture was observed to vary considerably from that seen in other years. In this group the toxicity and prostration were marked, there was a considerable proportion who exhibited marked dyspnea and wheezing, and the physical findings were characterized by diffuse small patchy infiltrations rather than large areas of consolidation. In spite of the severity of the clinical symptoms and the degree of heroic therapy necessary the mortality with sulfathiazole therapy was low, being 2% in this series. This mortality is compared with that of 1937, 1938, 1939, and 1940. This paper has been prepared with the collaboration of William B. Raycraft and Louis Frank.

Discussion opened by G. L. Kaufmann, Chicago.

"Vitamin K — Its Use in Pediatric Practice."
Henry G. Poncher, Chicago.

This paper deals with the observations of the normal variations in prothrombin time in the newborn and the findings in pathologic states. Hemorrhagic disease of the newborn will be considered in detail together with the treatment with various preparations of Vitamin K.

Discussion opened by J. E. Fitzgerald, Chicago.

"Immunization Against Commoner Contagious Diseases."

Frederick H. Maurer, Peoria.

A brief review of biological principles of immunity is presented. The use of various agents in the production of active and passive immunity against common contagious diseases is discussed. Methods and diagnostic value of Schick, Dick and Schultz Charlton tests, are also discussed. A summary of practical recommendations for use of immunizing agents against the commoner contagious diseases is given.

Discussion opened by W. L. Crawford, Rockford.

"The Diagnosis and Treatment of Congenital Diaphragmatic Hernia in Children."

John M. Dorsey, Chicago.

The paper will discuss the anatomy and the embryologic development of the various types of congenital diaphragmatic hernia with the aid of lantern slide demonstration. The symptoms and the importance of early recognition will be emphasized, especially as they are related to the success of the surgical repair. The several cases from the records of the Presbyterian Hospital will be presented with a discussion of the principals of treatment.

Discussion opened by Edwin M. Miller, Chicago.

TUESDAY AFTERNOON, MAY 20, 1941**Private Dining Room 17****PANEL DISCUSSION**

2:30 "The Thyroid in Childhood."
Anton J. Carlson, Chairman.

"Experimental Cretinism."

Margaret M. Kunde, Department of Medicine,
Northwestern University, Chicago.

"Pituitary-Thyroid Relations."

Howard G. Swann, Ph. D., Department of
Physiology, University of Chicago, Chicago.

"Hypothyroidism in Childhood."

Helmut P. Seckel, Department of Pediatrics,
University of Chicago, Chicago.

"Diagnosis and Prognosis in Thyroid Deficient Children."

I. Pat Bronstein, Department of Pediatrics,
University of Illinois, Chicago.

WEDNESDAY MORNING, MAY 21, 1941**Grand Ballroom**

Joint session with Sections on Medicine; Surgery; Public Health and Hygiene; Radiology; Obstetrics and Gynecology.

(For Complete Program, See Joint Sessions.)

THURSDAY MORNING, MAY 22, 1941**Grand Ballroom**

Joint session with Sections on Medicine; Surgery; Eye, Ear, Nose and Throat; Public Health and Hygiene; Radiology; Obstetrics and Gynecology.

(For Complete Program, See Joint Sessions.)

SECTION ON OBSTETRICS AND GYNECOLOGY

Herbert E. Schmitz Chairman
Milton E. Bitter Secretary

WEDNESDAY MORNING, MAY 21, 1941**Grand Ballroom**

Joint session with Sections on Medicine; Surgery; Public Health and Hygiene; Radiology; Pediatrics.

(For Complete Program, See Joint Sessions.)

WEDNESDAY AFTERNOON, MAY 21, 1941**Private Dining Room 17****CASE REPORTS**

2:00 Case of full term pregnancy and labor following bilateral oophorectomy at the fifth week of pregnancy.

Worling R. Young, Geneseo.

An ovarian and interstitial ectopic pregnancy and present the specimens.

A. J. Kobak, Chicago.

A twin interstitial ectopic pregnancy.

E. W. Fischmann, Chicago.

A series of x-ray pictures of a dicephalic monstrosity in-utero.

F. H. Falls, Chicago.

PAPERS FOR PRESENTATION

3:00 "The Management of Sterility Problem in Private Gynecological Practice."

Willard C. Scrivner, East St. Louis.

The paper contains a resume of private patients, presents problem of sterility, the duration of the complaint varies from a few months to sixteen years.

Highly technical and theoretical thoughts are avoided in this paper. It is aimed to help the general practitioner manage the problem which is of increasing importance in many angles both domestic and national.

Discussion opened by J. Cordonnier, East St. Louis.

3:30 "Cervical Polyps."

William B. Serbin, Chicago.

Cervical polyps are usually benign. Occasionally pathologic changes and even malignant changes occur in the polyp or at its base. Inasmuch as the general public appreciates periodic health examinations, here an opportunity presents itself for looking for early malignant changes. The mere removal of a cervical polyp as an office procedure should be meticulously carried out and the base of the polyp properly treated.

All material removed should be sent for microscopic examination and the patient followed up for possible malignant change. A technic for removal is presented together with some case reports and slides of pathologic material.

Discussion opened by Mark T. Goldstine, Chicago.

4:00 "The Climacteric and Menopause."

Edwin N. Nash, Galesburg.

The life of woman is divided into three sections.

- (a) Growth period.
- (b) Maturity or the Menacme.
- (c) Senescence.

Retrogressive changes in pelvic organs

Changes in function of endocrine gland — clinical manifestation.

- (a) General.
- (b) Cessation of menstruation
- (c) Local pelvic symptoms.

Diagnosis:

- (a) Pre and post menopausal hemorrhage.

Management:

- 1. General.
 - (a) Rest.
 - (b) Exercise.
 - (c) Recreation.
 - (d) Mental occupation.
 - (e) Nutrition.
- 2. Specific.
 - (a) Endocrine.

Can we demonstrate efficiency beyond peradventure?

Discussion opened by E. Graham Evans, Aurora.

4:30 "Postmenopausal Bleeding."

Clyde J. Geiger, Chicago.

The cases of vaginal bleeding that occurred after the menopause at the Cook County Gynecological tumor clinic have been studied. They include carcinoma of the cervix and cervical stump, carcinoma of the fundus, cervical polyps, senile vaginitis, etc. The time of appearance of bleeding after the menopause, the length of time before consulting a physician were studied. The age, parity and associated symptoms were analyzed. The malignant lesions were classified.

Discussion opened by F. J. Stewart, Kewanee.

THURSDAY MORNING, MAY 22, 1941

Grand Ballroom

Joint session with Sections on Medicine; Surgery; Eye, Ear, Nose and Throat; Public Health and Hygiene; Radiology; Pediatrics.

(For Complete Program, See Joint Sessions.)

RULES GOVERNING PRESENTATION OF PAPERS

"All papers read by members shall be limited to twenty minutes, and remarks in discussion to five minutes, floor privilege being allowed only once for the discussion of any one subject.

"All papers read before the Society or any of its Sections shall become the property of the Society. Each paper shall be deposited with the Secretary

of the Section when read and the presentation of a paper to the Illinois State Medical Society shall be considered tantamount to the assurance on the part of the writer that such paper has not already appeared and will not appear in medical print before it has been published in the Illinois Medical Journal.

"A paper not heard in its scheduled turn shall be held subject to call of the Chairman of the Section at the end of the regular session if time permits, or as an alternative at the end of the program.

"All discussions shall be confined strictly to the subject in hand.

"No paper shall appear in the printed transactions of the meeting unless read in full or in abstract."

(From By-Laws of Illinois State Medical Society.)

Programs of Special Organizations

SECRETARIES' CONFERENCE

A. R. Bogue, Chairman Rochelle
 Carl E. Clark, Vice-Chairman Sycamore
 Roswell T. Pettit, Secretary Ottawa

TUESDAY EVENING, MAY 20, 1941

Private Dining Room 14

6:00 Dinner Meeting.

"The Selective Service System as it Affects the Practice of Medicine, and the National Defense in Illinois."

Robert A. Bier, M.D., Captain, Medical Corps, Medical Division, Selective Service System, Washington.

Dr. Bier, in this address, will give information concerning the role of medicine in our national defense, and will give much information which will be of interest to medical societies, their officers, committees and individual members.

"Social Security Clients."

Charles H. Phifer, M. D., President-Elect, Illinois State Medical Society, Chicago.

Dr. Phifer, as Chairman of the Medical Advisory Committee to the Division of Old Age Assistance, Illinois Department of Public Welfare, and through his associations during recent years with the Illinois Emergency Relief Commission and its work in Cook County, will tell about present plans to improve the medical care for social security clients, and of recent conferences of his committee with the officials of this State Division. This discussion will be of interest to all physicians who have participated in the programs to give medical care to these people, and who realize that up to now, the plans have not been entirely satisfactory.

MEDICAL WOMEN'S ASSOCIATION

TUESDAY, MAY 20, 1941

12:15 Luncheon of Welcome.

Hostess: Branch No. 2 American Medical Women's Association.

Addresses of Welcome —

Drs. Ortmyer, Hall, Winnett, Taylor, Perlstein.

All medical women are urged to be present.

Lucille Snow, President,
 1320 North Ashland Avenue, Chicago.

WEDNESDAY, MAY 21, 1941

8:00 A. M. Defense Breakfast.

Courtesy Illinois State Medical Society to women members of the society.

PROGRAM

American Women's Hospitals in Defense Program.

Esther P. Lovejoy, Chairman Executive Board
American Women's Hospitals, Medical Service
Committee, American Medical Women's Association, Inc., 50 West 50th Street, New York City, New York.

Women in the Defense Program.

Elizabeth R. Miner, Honorary President, Branch
No. 17, American Medical Women's Association, Macomb.

Women and War.

Eva M. Wilson, State Reformatory for Women, Dwight.

Public Health in the Defense Program.

Grace Wightman, Chief, Division Child Hygiene
and Public Health Nursing, Department of
Health, Springfield.

Children in the Defense Program.

Marion K. Bowles, President of Board, Junior
College, Joliet.

Non members are cordially invited.

Carroll L. Birch, President,
Branch No. 17, American Medical
Women's Association,
1853 West Polk Street, Chicago.

WEDNESDAY, MAY 21, 1941

6:00 P. M. Reception for all women physicians preceding President's Dinner at 7:00 P. M.

Tables reserved for women physicians at the President's Dinner.

Bertha Van Hoosen, Chairman
Committee for Entertainment,
Medical Women.

Headquarters for all medical women and friends at the "History of Illinois Medical Women" booth.

**ILLINOIS SOCIETY OF
PATHOLOGISTS**

Perry J. Melnick, Chairman, Program Committee ..
..... Chicago

**TUESDAY MORNING, MAY 20, 1941
Private Dining Room 18**

9:00 "Changes in the Blood Cells of Diagnostic and Prognostic Value."
Raphael Isaacs, Chicago.

9:30 "Clinical—Pathological Conference."
S. A. Levinson, Chicago.

(1) Aids in the diagnosis of carcinoma of the pancreas.

(2) Diagnostic procedures in adhesive pericarditis.

(3) Pathologic anatomy of subacute bacterial endocarditis.

(4) Neurocytoma of the adrenal gland.

(5) Malignant melanoma.

Discussion opened by Warren H. Cole, Chicago.

(The above cases will be presented with use of colored photographs of gross specimens, projected on a screen.)

**SYMPOSIUM — THE ROLE OF PATHOLOGY
IN MEDICINE**

(A symposium outlining the vital function of the medical sciences in modern clinical practice.)

10:30 "The Role of Pathology in Internal Medicine."
M. Herbert Barker, Chicago.

11:00 "The Role of Pathology in Surgery."
R. Bruce Malcolm, Chicago.

11:30 "The Role of the Pathologist in the Management of Cancer."
James P. Simonds, Chicago.

**PHYSICIANS' ASSOCIATION
DEPARTMENT OF PUBLIC WELFARE
STATE OF ILLINOIS**

George L. Perkins President
J. W. Klapman Secretary-Treasurer

**TUESDAY MORNING, MAY 20, 1941
Private Dining Room 14**

9:00-12:00

"Electrocardiogram During Experimentally Induced Convulsive Seizures."

Allan Lieberman and Erich Liebert, Elgin.

Electrocardiographic studies during and after intravenous injection of various convulsive drugs were done on experimental animals. The results show evidence of stimulation and over-stimulation of the autonomic nervous system. Severe conduction disturbance and myocardial ischemia by various forms of bundle blocks, ST deviations and electrical alternans of the T wave were found. It is concluded that the conduction disturbance preceded all other somatic display and was an effect centrally induced whereas the ischemia could have been either primarily or secondarily induced.

Discussion opened by A. A. Low and Benjamin H. Hilkevitch, Chicago.

"Electrically Induced Grand Mal."

J. V. Edlin, Chicago.

Observation on 100 patients treated by electrically induced convulsions seems to indicate that this form of treatment is preferable to metrazol. The convulsions produced by electricity are characterized by immediate loss of consciousness and instantaneous convulsions and absence of the first clonic state. The contraindications and complications are the same as in those produced by metrazol but electrical therapy is preferable because of the absence of fear. A mild apprehension which is sometimes noticeable may be eliminated by the addition of scopolamine hydrobromide, 1/100 gr., one hour before therapy.

The author does not find the high percentage of recoveries that the foreign literature offers, but has the impression that there is a slightly greater percentage of recoveries than that obtained with metrazol.

Discussion opened by Lloyd H. Ziegler, Milwaukee, Wisconsin.

"The Role of Dilantin in Epilepsy."

S. D. Klow, Jacksonville.

The relative effectiveness of the common anti-convulsants were studied on 70 epileptic patients. Eighty-seven per cent were definitely improved on dilantin combined with phenobarbital as compared to 63% improved under dilantin and bromides, 62% on dilantin alone, 45% on phenobarbital and 57% on bromides alone. Grand mal seizures were best relieved by dilantin alone or in combination with phenobarbital, while phenobarbital alone is more effective in controlling petit mal seizures. Psychosis due to epilepsy seems not to have been influenced by any of the drugs studied.

Discussion opened by B. Lichenstein, Chicago.

"The Paretic Convulsion With Special Reference to its Control With Dilantin."

L. H. Eisendorf, East Moline.

The effect of dilantin was studied in cases of general paresis complicated by epileptic seizures. The results show that dilantin is merited in certain cases of paretic convulsions.

Discussion opened by B. Lichenstein, Chicago.

"The Problem of Chronic Alcoholism in State Hospitals."

R. Novick, Manteno.

The paper deals with a problem that is attracting increasing attention. A brief statistical survey was made of admissions of alcoholics to all United States mental institutions and to Illinois state hospitals. The second part of the paper deals with admissions to the Manteno State Hospital during 1939-1940. Of a total of 1248 patients admitted, 25% were alcoholics. A study of 150 of these alcoholics was made with special attention as to frequency of admissions, number of readmissions, period of hospitalization, duration of period between admissions, age, race, sex and psychotic picture.

The findings indicate that a reorientation in management of these cases is imperative. The author would suggest the erection of a separate institution for these alcoholics where the cases can be carefully studied and treatment instituted.

Discussion opened by Charles F. Read, Elgin; and Walter H. Baer, Manteno.

"The Significance of Religious Preoccupation in Prepsychotic Period of Schizophrenia."

M. Urist and L. B. Shapiro, Manteno.

The purpose of this communication is to demonstrate the significance of religious interests in the pre-psychotic schizophrenic. In one group of cases this interest is already the manifestation of the psychosis and constitutes the first break with reality.

In a second group the religious interest is in the nature of a psychological over-compensation, the purpose of which is to maintain an equilibrium and keep the personality in a healthy integrated state.

There is also a third group where the mechanism involved is one of reaction formation. It appears in these cases as the last attempt to ward off the emerging complex and conflictual instinctual drives that threaten to disrupt the integrity of the personality.

Discussion opened by Stanislaus Szurek, Chicago.

TUESDAY EVENING, MAY 20, 1941

Dinner Guest Speaker — Julius Hess, Chicago.

**CHICAGO SOCIETY OF
INDUSTRIAL MEDICINE AND
SURGERY**

Roland A. Jacobson, President Chicago
Thomas C. Browning, Vice-President Chicago
Frank P. Hammond, Secretary-Treasurer Chicago

TUESDAY MORNING, MAY 20, 1941

Grand Ballroom

9:00 Davis & Geck Movie.

9:30 "Skin Lesions of the Hand."

Theodore Cornbleet, Chicago.

Some of the skin lesions of the hand are described and differentiated and notes made on their therapy. Special emphasis is laid on the consideration of contact or irritant dermatitis, eczematoid ringworm, nummular and simple eczema. Other entities due to bacterial and fungous infection and some based on derangements of metabolism are given consideration.

10:00 "Fractures of the Pelvis"

George L. Apfelbach, Chicago.

- (1) The purpose of the discussion on pelvic fractures
 - a. Classification.
 - b. Improved modern methods of treatment especially of the malgaine type.
 - c. Some of the results of our investigation of disability a year later in non-litigant cases.
- (2) Any classification which is comprehensive and covers various types of pelvic fractures is satisfactory. The most common type are pubic fractures. Others are:
 - a. Anterior-posterior ring fractures which are through the symphysis.
 - b. Hemilateral dislocations.
 - c. Remi with sacroiliac.
 - d. Fractures of the ilium.

e. Avulsion fractures: inferior spine of the ilium, ischium and superior spine of the ilium.

f. Fracture of the acetabulum with central fracture of the head of the femur.

10:30 "X-ray Surveys of the Tuberculus Chest in Industry."

Hollis E. Potter, Chicago.

Methods (a) When there is a silicosis hazard involved. (b) When there is no dust hazard.

When no dust hazard a simpler x-ray procedure may be adopted. Comparative value of fluoroscopy, miniature radiography, paper films, conventional single film and stereoscopic radiography.

11:00 "Disqualifying Conditions in Pre-employment Examinations."

James A. Valentine and Joseph H. Thomas, Chicago.

This paper will cover disqualifying conditions for general employment. No attempt will be made to go into controversial conditions or special types of employment. We wish to cover physical handicaps which in our opinion constitute a hazard to the man himself or to the fellow workmen.

TUESDAY AFTERNOON, MAY 20, 1941

Private Dining Room 14

Joint Session With Section on Surgery.

2:30 "Fractures of the Lower Forearm and Wrist."

Richard J. Bennett, Jr., Chicago.

2:45 "The Immediate Care of Industrial Injuries."

Thomas C. Douglass, Chicago.

3:00 "Blood Transfusion Reactions, Their Causes and Prevention."

Leo M. Zimmerman, Harold Laufman and Anna Marie Strauss, Chicago.

3:15 "Bone Pain."

Graham Kernwein, Chicago.

3:30 "Fractures About the Elbow."

James J. Callahan, Chicago.

3:45 "The Use of Injections for the Relief of Peripheral Pain and Other Conditions."

Frederick W. Slobe, Chicago.

4:00 "Repair of Indirect Inguinal Hernia Through Low Midline Incision."

W. Kenneth Jennings, Evanston, and Barry Anson, Chicago.

**VETERANS' SERVICE COMMITTEE
DINNER**

TUESDAY EVENING, MAY 20, 1941

Private Dining Room 17

The annual dinner of the Veterans' Service Committee will be held on Tuesday Evening, May 20, at 6:00 P.M.

Dr. F. O. Fredrickson, Chairman of the Committee, will officiate as the presiding officer.

PROGRAM

Call to Order.

1. Presentation of Colors.

Joseph C. Beck, Commander Medical Post No. 1.

2. Bugle: To the Colors.

3. Reports —

Patrick Machler, Department Surgeon, Department Illinois American Legion.

Pliny Blodgett, Chairman of Local Committee.

4. "Selective Service — What It Is and What It Means."
Paul G. Armstrong, State Director of Selective Service.
5. "The Medical Aspect of the Illinois Reserve Militia."
General John V. Clinnin.
6. "Remarks."
Wm. F. Waugh, Department Commander, Department of Illinois American Legion.
7. Moment of Silence.
8. Retirement of Colors.

MEETINGS OF THE HOUSE OF DELEGATES

Foyer of Grand Ballroom

TUESDAY AFTERNOON, MAY 20, 1941

- 3:00 First meeting of the House of Delegates called to order by the President, James S. Templeton, for Reports of Officers, Councilors, Committees, Appointment of Reference Committees. Introduction of Resolutions, and for the transaction of other business which may come before the House.

Private Dining Room 14

THURSDAY MORNING, MAY 22, 1941

- 9:00 Second meeting of the House of Delegates called to order by the President for the Election of Officers, Councilors, Committees, Delegates and Alternates to the American Medical Association, Reports of Reference Committees and action on same. Action on Resolutions, and for the transaction of other business to come before the House.

ANNUAL GOLF TOURNAMENT

The Golf Tournament Committee has completed arrangements to hold the Annual Illinois State Medical Society Golf Tournament at Olympia Fields Country Club, Monday, May 19, 1941. Playoff at 1:00 P. M. Course No. 1. Those who are prevented from playing Monday, may play Tuesday, May 20th.

The James H. Hutton Centennial Trophy is the top prize going to the member of the Society who shoots the lowest gross score. Prizes will be available for second, third and fourth low gross — first, second and third high gross and first, second, third, fourth and fifth low net. Handicap system will be the Banker's Method, which gives every player an equal chance.

Lunch may be had at any time. Refreshments and dinner at the club will be from 6:00 to 7:00 P. M. by self-formed groups. A member of the Committee will be on hand all day.

Olympia Fields Country Club (three miles from Chicago Heights, Illinois) can be reached by the Illinois Central Electric Suburban Train (Matteson) leaving Randolph, Van Buren and Twelfth Streets about every 15 minutes.

Prizes will be awarded at the President's Dinner Wednesday evening, by George E. Johnson, Chairman of Prizes.

Committee:

Frank P. Hammond, General Chairman
George E. Johnson, Prizes
Robert J. Hawkins, Handicap

ANNUAL STATE MATERNAL WELFARE LUNCHEON

12:00 noon

Private Dining Room No. 18, Club Floor Palmer House
Subject: Wagner Bill

Speaker: Dr. Frederick L. Adair, Chairman National Maternal Welfare Committee.

All Physicians of Organized Medicine Invited.

John F. Carey, M.D. Secretary
T. B. Williamson, M.D. Chrm.

ALUMNI LUNCHEONS

NORTHWESTERN UNIVERSITY MEDICAL SCHOOL

Private Dining Room 17

During the Illinois State Medical Society Annual Meeting, The Alumni of Northwestern University Medical School are holding a luncheon in Room 17 at the Palmer House, Chicago, Illinois, on May 21, 1941, at 12:00 noon. All Northwestern men are urged to be present.

Dr. Fred Fitz, '34 and Dr. Thomas C. Douglass, '35, Chairmen in Charge.

UNIVERSITY OF ILLINOIS COLLEGE OF MEDICINE

Private Dining Room 14

An alumni faculty luncheon will be held during the Illinois State Medical Society annual meeting at the Palmer House on Wednesday, May 21, at 12:00 noon. Come and greet the men who came to Chicago.

HOTEL ACCOMMODATIONS

If you go to Chicago to attend the 101st annual meeting of the Illinois State Medical Society without having previously made hotel reservations, the local committee members will do all they can to assist you in finding the type of reservation you desire.

Since the meeting is in Chicago this year, no one should have any serious difficulty securing loop accommodations within easy walking distance of headquarters at the Palmer House.

Parking Privileges

As there are no public parking facilities in the Chicago loop, you physicians who have driven to Chicago, will probably desire to take advantage of the storage garage just across the street from the Palmer House at the Monroe Street entrance. You will find adequate facilities here, and reasonable storage rates for your car for the duration of the meeting.

EXHIBITS

The exhibits at the 1941 annual meeting have been selected very carefully, and are worthy of the consideration of every physician attending this meeting. Both technical and scientific exhibits are well displayed. The technical exhibits will be found in the Exhibit Hall of the Palmer House, and the Scientific exhibits are on display in the Red Lacquer Room.

Scientific Exhibits

The Committee on Scientific Exhibits has arranged a fine display of exhibits which will be of interest to all. These exhibits have been selected carefully, and deal with a wide range of subjects. We feel sure that a vote of confidence and appreciation will be given to our Director of Exhibits, Dr. J. P. Simonds.

Technical Exhibits

The Illinois State Medical Society is justly proud of the group of fine technical exhibits on display this year. These exhibits have a definite educational value as they show the progress made during the past year by those concerns which are always striv-

ing to develop something new that will aid the medical profession. All physicians, regardless of their specialty, will find many items of interest among these technical exhibits.

We wish to take this opportunity to call your attention to the fact, that while many familiar faces will be present to greet you again this year, you will find many new ones. The largest group of technical exhibits in the history of the Illinois State Medical Society has been assembled this year for your education and enjoyment. We sincerely hope that you will take advantage of this fact, and visit the booths in the technical exhibit hall.

Scientific Exhibits

RED LACQUER ROOM

Frank J. Jirka, Chairman Chicago
James P. Simonds, Director of Exhibits Chicago

"Deprivation of the Infant of Its Placental Blood. Early and Late Effects on the Blood Picture."

Howard L. Alt, Quin B. DeMarsh and William F. Windle Northwestern University Medical School.

Booth No. 44

The exhibit will consist of a model, colored illustrations and graphs, "written statements," etc. In these will be depicted (1) the common custom of prompt clamping of the umbilical cord and the necessity of this practice in collecting placental blood for transfusion purposes, (2) the natural expulsion of the placenta before severance of the cord, (3) the amount of blood that can be obtained from the placenta after immediate and delayed clamping of the cord, (4) the relationship between the blood volume of the placenta and infant and the flow of placental blood into the infant and (5) the blood picture of the infant after immediate and delayed clamping of the cord. Iron equivalents of hemoglobin in the blood of the placenta and infant will be illustrated by various amounts of iron in test tubes. By this means, it will be apparent that deprivation of the infant of the iron in placental blood might result in an anemia during the nursing period. Charted values show this to be true.

"American Physio-Therapy Association."

Margaret C. Winters, American Physio-Therapy Association.

Booth No. 12

Statistics of Membership, location of schools, membership requirements and ethics of the American Physio-Therapy Association.

"Aseptic Necrosis of Femoral Head After Traumatic Dislocation of the Hip."

Sam W. Banks, Division of Orthopaedic Surgery, University of Chicago.

Booth No. 22

The exhibit will consist of roentgenograms (transparencies) of nine interesting cases of traumatic dislocations of the hip which were followed by aseptic necrosis of the femoral head. The roentgen changes are interpreted in terms of the pathological alterations. The cases demonstrate the characteristic clinical, pathological and roentgenographic features of this condition. Several cases have been followed six and seven years after the acute injury and show the extensive changes and poor functional end results when the condition is not recognized early and the hip inadequately protected during replacement of the dead bone. These alterations are in marked contrast to one case which was diagnosed before there were roentgen changes. This patient was followed by roentgenograms during the entire period of replacement. Collapse or fragmentation of the epiphysis did not occur due to adequate protection from weight bearing and the immediate end result is good.

Another case demonstrates the roentgen changes and usual satisfactory result (six years after injury) when the head becomes devitalized after a traumatic dislocation in young children as compared to the unsatisfactory outcome in recorded cases in older children and adults.

A summary of fifty cases in the literature is included. Forty-two of these have resulted in deformed and painful hips. This again emphasizes the importance of prolonged observation of all cases of traumatic dislocations so that the

complication of aseptic necrosis can be recognized early before collapse of the head has occurred and which may preclude the possibility of a satisfactory outcome.

"Thiocyanates: Clinical and Experimental Studies."

M. Herbert Barker, Maurice H. Wald, Howard A. Lindberg and Loyal Davis, Northwestern University Medical School, Chicago.

Booth No. 24

Charts, graphs, photographs and illuminated transparencies illustrating the effects of the drug upon normal and hypertensive dogs and upon humans with hypertension; upon human hypertension before and after splanchnicotomy. The toxic manifestations and the pathological effects of prolonged toxic doses will be shown. The technic of blood thiocyanate determination and its importance to correct therapeutics with the drug will be accented.

"Bile Duct Surgery: A New Method of Anastomosis of the Bile Ducts to the Stomach and Duodenum."

Roy E. Brackin, Rush Medical College, Department of Surgery, Chicago.

Booth No. 32

This is a new method of transplantation of the bile ducts and resembles our method of uretero-intestinal anastomosis which was shown at the 1939 meeting. The experimental findings are to be shown by means of the gross animal specimens, photomicrographs of the choledochal-intestinal openings up to one year after operation. Technic will be shown by drawings. The evidence for the various steps of the method will be shown by charts and experimental findings. We have two clinical cases now to present upon which this method has been employed.

"Burns Treated By Cod Liver Oil Ointment — Tissue Paper Dressing. A Treatment, Gentle, Simple, Safe, in Minor and Extensive Burns."

George B. Callahan, St. Therese's and Victory Memorial Hospitals, Waukegan.

Booth No. 42

Individual mountings of several types of burns classified by cause, thermal, chemical, dry steam, etc., with extent marked in one picture of areas involved, the duplicate showing end results; pictures to be uniform in size and writing easily legible with minimum wording adequate to describe. Summarized, favorable results (only one infection); smaller one illustrating in detail gentleness, simplicity, surgical cleansing, cod liver oil ointment, tissue paper dressing and redressing and supportive measures.

One colored moving picture 13-15 minutes in length of extensively (head to foot) burned case showing technic, application, progress in healing and end results. A few Kodachrome still pictures.

"Bone Sarcoma."

American College of Surgeons.

Booth No. 39

Exhibit consists of three cases with transparencies, sections, photomicrographs and x-rays of types of bone sarcoma. Also posters describing the content of the Registry of Bone Sarcoma of the American College of Surgeons.

"Reaction of Bone to Metallic Implants."

H. A. Davenport and R. T. Bothe, Northwestern University Medical School, Chicago.

Booth No. 6

The material to be shown consists of about 40 femurs of cats. These are to be mounted on cardboard and accompanied by x-ray photographs. The object of the study was to determine whether electrolytic action between metals was a determining factor in the response of living bone to metallic implants, or whether other chemical and physical factors determined the type of response. Readings of potential differences between unlike metals were made in the living animal. The findings indicate that the bone responds in a rather characteristic manner to a given pure metal or alloy and that this reaction is largely independent of an adjacent unlike metal. Electrolytic action is of minor importance.

"The Surgical Approach to Hypertension."

Geza de Takats, Howard E. Heyer, Roy O. Riser and Robert W. Keeton, University of Illinois College of Medicine, Chicago.

Booth No. 31

Charts illustrating the historical development of surgical treatment, the classification of hypertensive states, the grading of the severity of the disease and the indications for operation are shown. The pre-operative study of patients is described. The various technics used in this clinic are shown. The results are classified and tabulated. The mechanism of relief obtained by surgical methods is analyzed. Illustrative case reports are given. Moulages illustrating the degree and nature of arteriolar sclerosis have been prepared. Colored photographs of eyegrounds are shown in a transparent box illustrating the various grades of hypertension and the changes occurring after operation.

"Lipocaic. A Fat Metabolizing Hormone of the Pancreas."

L. R. Dragstedt, O. C. Julian, D. E. Clark, J. G. Allen, and C. W. Vermeulen, University of Chicago, Department of Surgery, Chicago.

Booth No. 7

Exhibit will present evidence for the existence of the hormone lipocaic and for certain of its properties and functions. The effect of lipocaic in the treatment of certain types of fatty infiltration of the liver, xanthomatosis and psoriasis will be presented.

"Outdoor Allergens of Illinos."

Oren C. Durham, Abbott Laboratories, North Chicago.

Booth No. 35

The exhibit deals with pollen and fungus spore surveys in general, methods, apparatus, identification and statistical results of nation-wide surveys over a period of 15 years. Special attention is given to a combined field and atmospheric survey of Chicago in which a careful check was made of the hay fever plants in each square mile of the city. A card index covering each square mile, as well as surrounding suburbs, will be available for reference. Results of a state-wide survey will also be shown. A large reference collection of typical hay fever pollens and fungus spores will be available for examination and practice identification.

"Women's Field Army, American Society for the Control of Cancer."

Mrs. Arthur I. Edison, State Commander Illinois Division.

Booth No. 38

Diorama giving statistics on cancer — also placards emphasizing the fact that early cancer can be cured. Posters explaining work of the Women's Field Army and its aims for Illinois. Slides to be shown explaining organization of the Women's Field Army and the fight against cancer.

"Fractures of the Facial Bones."**Methods of Treatment.**

Casper M. Epstein, M.D., D.D.S., Chicago.

Booth No. 9

There will be approximately 50 skulls and wax models depicting the various types of fractures of the facial bones and their method of treatment. There will also be several large models and diagrams illustrating the anatomy involved in these injuries. About 70 or 100 radiographic films will reveal a variety of fractures of the facial bones and the results obtained by the various methods demonstrated. A colored movie will be shown illustrating two different types of fractures and their management.

"Cesarean Section"

Frederick H. Falls, University of Illinois College of Medicine, and State Department of Public Health, Chicago, and Charlotte S. Holt, State Department of Public Health, Chicago.

Booth No. 43

The exhibit will consist of 15 sculptured models depicting the pathological anatomy and operative technic involved in the common operations for cesarean section. Special steps in technic and indications for operation are shown in wash drawings. A lettered chart pointing out more common indications and contra-indications for the operation, and one indicating important historical facts in regard to development of the operation are shown; also a lettered chart on the use of x-ray in determining indications.

"Periodical Medical Examinations. A Twenty-Five Year Experience in Industry."

Hart E. Fisher, Lewis H. Ruttenberg, George H. Irwin, Chicago Rapid Transit Company, Medical Department, Chicago.

Booth No. 20

A true observation of twenty-five years experience in industry. This subject will show our experience of twenty-five years' observation on the same group of transportation employees through the medium of charts, diagrams, forms, photographs, apparatus, cardiographic study, audiometer study of hearing acuity and the testing of night blindness.

The history, routines, procedures, of these medical surveys and the results obtained after a period of twenty-five years' experience in employee health conservation, with the same group of transportation employees.

"Recent Advances in Diagnosis and Treatment of Pulmonary Tuberculosis. Edward Sanatorium."

Jerome R. Head, Medical Director, Edward Sanatorium, Naperville.

Booth No. 41

Reproductions of x-rays, photographs and drawings illustrating (1) new technic for extrapleural thoracoplasty, (2) the laminograph in the diagnosis of cavities in pulmonary tuberculosis, and (3) Monaldi's suction treatment of tuberculous cavities.

"X-Ray Study of Pulmonary Tuberculosis, Diagnosis and Treatment."

Municipal Tuberculosis Sanitarium of Chicago.

Booth No. 16

Three illuminated cabinets demonstrating by x-ray and pathologic specimens diseases of the lungs and results of surgical treatment. Colored moving picture demonstrating the surgical technic.

"Mechanical Nostrums."

American Medical Association.

Booth No. 27

An exhibit from the Council on Physical Therapy and the Bureau of Investigation showing various mechanical devices such as the "Horse Collar," and "gas pipe" cure, etc., for which weird claims have been made, together with an exposition file containing descriptions of many more similar gadgets.

"Use and Abuse of Barbiturates."

American Medical Association.

Booth No. 28

An exhibit from the Council on Pharmacy and Chemistry consisting of posters showing the use and abuse of the barbiturates; a chart giving the names and chemical formulas of thirty products on the market; an exposition file and New and Non-official Remedies giving additional information.

"Cutaneous Manifestations of Tuberculosis."

American Medical Association.

Booth No. 29

An exhibit from the Scientific Exhibit of the American Medical Association, in conjunction with the Section on Dermatology and Syphilology, consisting of four panels each five feet high and three feet wide, showing photographs of cutaneous tuberculosis and conditions which simulate it.

"Mottled Enamel and Dental Program Studies and Results in Illinois."

The Division of Dental Health Education in Cooperation with the Illinois Dental Society.

Booth No. 18

Studies made by the Division of Dental Health Education in cooperation with the Illinois State Dental Society on mottled enamel caused by fluorine in public water supplies in certain sections of Illinois.

"Detection of False Positive Reactions in Sero Diagnosis of Syphilis."

State of Illinois, Department of Public Health.

Booth No. 25

Exhibit of charts illustrating basis of Kahn Test for the detection of false positive serologic reactions as used in the State Department of Public Health Laboratories; detection of reactions in the absence of syphilis given by lower animals,

leprosy, malaria and other pathologic cases; detection of reactions in syphilis; practical demonstrations are planned with verification test of true and false positive serologic reactions.

"Sight Saving in the Schools."

Illinois Society for the Prevention of Blindness.

Booth No. 40

Diorama of Sight-Saving Class; Bulletin Board showing materials used in Sight-Saving Room in public schools in Illinois.

"Studies on Shock in Man and Animals."

Sidney O. Levinson, Heinrich Necheles, Helmut Gutmann and Mr. William Olson, Samuel Deutsch Convalescent Serum Center and Department of Gastro-Intestinal Research of Michael Reese Hospital, Chicago.

Booth No. 10

An illuminated cabinet displaying transilutes with clinical charts and descriptions; an illuminated table displaying the various steps of serum and plasma preparation; graphs and descriptions of studies of shock in animals from the point of view of blood chemistry and transfusion therapy.

"Sternal Marrow Studies."

L. R. Limarzi, R. M. Jones, J. T. Paul, University of Illinois College of Medicine, Chicago.

Booth No. 11

The exhibit will consist of charts and drawings illustrating the methods in general use in the study of bone marrow and the indications for sternal marrow aspirations. A correlation of the peripheral blood findings with the picture seen in the bone marrow in certain anemias, leukopenic states and thrombocytopenic diseases will be illustrated by a series of photomicrographs.

"Heart Sounds — Clinical Evaluation."

Clayton J. Lundy, Elizabeth McCormick Child Research Grant, and LaRabida Sanitarium, Chicago.

Booth No. 19

The exhibit consists of a series of charts made up of drawings and heart sound records derived from patients suffering from Rheumatic Heart Disease especially, and a few other common clinical conditions.

"Educational Activities of a State Medical Society."

Educational Committee, Illinois State Medical Society.

Booth No. 2

The Exhibit will show the various methods used by the Educational Committee of the Illinois State Medical Society to bring the story of medicine and good health before the public. It will show how the cooperation of county medical societies and individual doctors makes such a program effective. Panels and diagrams will be used.

"Sinus Disease and the Radiologist. Is Radiation Therapy in Para-nasal Sinus Disease Worth While?"

H. T. Mostrom, Batavia.

Booth No. 1

This exhibit records by a number of x-ray films and brief case histories, the experiences encountered in treating with x-radiation a rather large number of cases of para-nasal sinus disease over a period of four years.

Over 300 cases were surveyed roentgenologically, and of these over 200 were treated. A short history was taken in every case prior to radiation therapy and where possible films were made after the completion of treatment for comparison with film pathology present before therapy. In a few instances films were made weekly or every other week during the period of treatment to observe changes as they occurred.

Illustrative films of various types of sinus pathology encountered will be shown together with companion films indicating the changes apparently induced by x-ray therapy. In other cases films will be shown to illustrate the types of sinus pathology where x-ray therapy failed to yield a satisfactory clinical result.

"Beaded Wires (Thompson) in the Treatment of Fractures of the Leg."

Charles N. Pearce, Chicago.

Booth No. 26

The use of Beaded Wires for fixation of fractures in closed reduction has resulted in materially reducing delayed union, necessary for open reduction, and has diminished hospital stay to as low as two days. Patients may be ambulatory within twenty-four hours after reduction. Beaded Wires may also be used instead of screws in fractures involving joints with tibial plateau and trimalleolar fractures.

A new bow and drill for these wires will also be demonstrated. Models will also be shown in addition to x-ray films.

"Analysis of Eight Cases of Liver Pathology."

Walter Schiller and William Mavrelis, Cook County Hospital, Cook County Graduate School, Chicago.

Booth No. 15

Eight mounted gross specimens in jars. Microscopic slides in viewing box from each case. Cards with histories, gross and microscopic descriptions posted.

"The Treatment of the Pathology of Inflammation by Short Wave Diathermy. (Electromagnetic Induction)."

Milton G. Schmitt, Northwestern University Medical School, Chicago.

Booth No. 4

Roentgenographic and photographic presentation of representative cases comprising inflammatory conditions of traumatic and infectious origin treated by short wave diathermy with application by electromagnetic induction. The cases include: carbuncle; cellulitis of the face; infected hand with lymphangitis; non union of tibia and fibula (9 months standing); osteomyelitis of tibia (post operative treatment); and pneumonitis. The principles upon which the technic is based are portrayed and explained by charts and diagrammatic illustrations, presenting a new concept of treatment whereby conditions heretofore considered contraindications may be safely and successfully treated. All materials will be displayed as transparencies on fluorescent illuminators.

"Professional Pharmaceutical Exhibit."

Illinois Pharmaceutical Association, and the University of Illinois School of Pharmacy, Chicago.

Booth No. 30

Professional pharmaceutical exhibit.

"Radium Therapy."

Frank E. Simpson, Frank E. Simpson Radium Institute, Chicago.

Booth No. 3

The exhibit will be composed entirely of motion pictures in color. There are five separate films, the titles of which are as follows:

1. Radium Treatment of Carcinoma of the Tongue.
2. Intra-oral Carcinoma.
3. Radium Treatment of Carcinoma of the Larynx.
4. Radium Treatment of Carcinoma of the Lip.
5. Radium Treatment of Angiomas.

"Gastrosocopy and Peritoneoscopy as Aids to Diagnosis."

Leo L. J. Hardt, Frank DeTrana, LeRoy H. Sloan, Municipal Tuberculosis Sanitarium, Cook County Hospital, Illinois Central Hospital, Chicago.

Booth No. 17

Moving pictures in color demonstrating the technic of gastrosocopic procedure and of peritoneoscopic procedure.

Lantern slides in color of gastrosocopic findings showing the value of the procedure in diagnosis. The lantern slides are projected through a new lantern with the reproduction of the natural colors.

Lantern slides of the appearance of gross lesions of the abdominal viscera when viewed by peritoneoscopy.

"The Stream of Medicine Through 5,000 Years."

Fredrick Stenn, Chicago.

Booth No. 5

The progress of medicine is personified in the form of a river which moves backwards and forwards receiving tributaries and entering a large lake representing modern

medicine. The particular periods of medicine are specified on the river. Portraits of twelve representative individuals of the various periods are along side with brief remarks of their attainments. Statements are enclosed regarding lessons taught by history.

"Sex Hormones. Clinical Application."

Willard O. Thompson, and Norris J. Heckel,
Rush Medical College and Presbyterian Hospital, Chicago.

Booth No. 13

The following effects of administration of the male and female sex hormones will be illustrated with photographs and photomicrographs:

1. Stimulation of genital growth and the development of other secondary sexual characteristics in men with eunuchoidism and in women with primary amenorrhea.
2. Damage to the normal testis. Illustrated also by spermatozoa counts.

"Breast Tumors"

Joseph A. Tuta, Grant Hospital, and the Department of Pathology, University of Illinois College of Medicine, Chicago.

Booth No. 37

The exhibit is composed of Kodachrome lantern slides of approximately 35 cases of breast tumors. The slides are mainly cross sections of the unfixed tumor masses, together with a few microscopic slides. The history of the case accompanies the showing of each slide. There are also charts of breast tumors and museum jars of specimens.

"The History of Illinois Medical Women."

Branch No. 2, American Medical Women's Association.

Booth No. 36

Consists of figurines of famous medical women, books written by medical women, pictures of distinguished sons and daughters of Illinois medical women: slides illustrating lectures and demonstrations of the work of medical women.

"Ambulatory Treatment of Varicose Veins and Ulcers."

Arnell M. Vaughan, and Robert E. Lee, Loyola University School of Medicine, Fantus Clinic, Cook County Hospital, Mercy Hospital Free Dispensary, Chicago.

Booth No. 23

The exhibit consists of the following:

1. Two large posters with photographs and legends, describing case histories.
2. Two large posters with photographs and legends showing anatomy of saphenous magna, its branches at fossae ovalis, and the surgical technic of high saphenous vein ligation.
3. Dissected cadaver specimens of saphenous veins, its branches and its relationship to femoral vein at fossae ovalis.

"Cutaneous Tumors — Benign and Malignant."

Erwin P. Zeisler, Northwestern University Medical School, Chicago.

Booth No. 8

An exhibit consisting mainly of 5 x 7 photographs tinted with transparent oil to bring out the natural colors of the different tumors of the skin. The clinical and histologic features that are important in differential diagnosis are brought out by the exhibit.

"Pathological Museum Specimens."

Otto Saphir, The Chicago Memorial Hospital, Chicago.

Booth No. 14

It is planned to exhibit a number of well mounted and well preserved specimens giving a short summary of the history of the patient from whom the specimen was removed, together with microphotographs exhibiting the pertinent morphologic character of the specimens.

"Hygeia."

The American Medical Association.

Booth No. 34

In this booth, there will be on display sample copies of HYGEIA, The Health Magazine, published by the American Medical Association. As you know, HYGEIA makes a splendid magazine for your reception room table. A number

of doctors are under the impression that HYGEIA is designed for the physician. That is not the case. HYGEIA is especially planned and written to appeal to your waiting patients. You are invited to visit this booth and talk to members of the Woman's Auxiliary who will be in charge.

"Typhoid Carriers."

Walter H. Baer, William Saphir, Frederic Plotke, Manteno State Hospital, Manteno.

Booth No. 21

Tables are presented showing the results of a study on 110 typhoid carriers at the Manteno State Hospital. A general survey, classification of cases and therapeutic attempts are demonstrated by way of colored drawings.

"A Kodachrome Exhibit of Cutaneous Diseases."

Edward A. Oliver, Department of Dermatology, Northwestern University Medical School, Chicago.

Booth No. 33

Exhibit will consist of a large frame of Kodachrome pictures, depicting the various cutaneous diseases seen in every day practice. It will show various pictures of cutaneous syphilis.

Technical Exhibitors

AT THE 1941 ANNUAL MEETING

A—

Abbott Laboratories, North Chicago, Illinois
A. S. Aloe Company, St. Louis, Missouri
American Hospital Supply Corporation, Chicago, Illinois
The Arlington Chemical Company, Yonkers, New York

Armour and Company, Chicago, Illinois

B—

Bard-Parker Company, Inc., Danbury, Connecticut
Bell & Howell Company, Chicago, Illinois
Bilhuber-Knoll Corporation, Orange, New Jersey
The Borden Company, New York, New York
The Burdick Corporation, Milton, Wisconsin
Burroughs Wellcome & Co., Inc., New York, New York

C—

Cambridge Instrument Co., Inc., New York, New York
Cameron Surgical Specialty Company, Chicago, Illinois
Carnation Company, Milwaukee, Wisconsin
The Chicago Dietetic Supply House, Inc., Chicago, Illinois

Chicago Pharmacal Company, Chicago, Illinois
Ciba Pharmaceutical Products, Inc., Summit, New Jersey

The Coca-Cola Company, Atlanta, Georgia

D—

Davies, Rose and Co., Ltd., Boston, Massachusetts
F. A. Davis Company, Philadelphia, Pennsylvania
R. B. Davis Sales Company, Hoboken, New Jersey
The DeVilbiss Company, Toledo, Ohio
A. Diadul & Sons, Inc., Chicago, Illinois
Doak Company, Inc., Cleveland, Ohio
Doho Chemical Corporation, New York, New York

E—

Eli Lilly and Company, Indianapolis, Indiana

F—

C. B. Fleet, Co., Inc., Lynchburg, Virginia
Flint, Eaton & Company, Decatur, Illinois
H. G. Fischer & Company, Chicago, Illinois

G—

General Electric X-Ray Corporation, Chicago, Illinois
Gerber Products Company, Fremont, Michigan

H—

The G. F. Harvey Company, Saratoga Springs, New York

H. J. Heinz Company, Pittsburgh, Pennsylvania
Hille Laboratories, Chicago, Illinois
Horlick's Malted Milk Corporation, Racine, Wisconsin
Hynson, Westcott & Dunning, Inc., Baltimore, Maryland

J—

"The 'Junket' Folks," Little Falls, New York

K—

L—

The Lakeside Laboratories, Inc., Milwaukee, Wisconsin

Lea & Febiger, Philadelphia, Pennsylvania
Lederle Laboratories, Inc., New York, New York
Thomas Leeming & Company, New York, New York
Libby, McNeill & Libby, Chicago, Illinois
J. B. Lippincott Company, Philadelphia, Pennsylvania

M—

A. E. Mallard, Detroit, Michigan
Mead Johnson & Company, Evansville, Indiana
The Medical Protective Company, Fort Wayne, Indiana

Mellin's Food Company, Boston, Massachusetts
The Mennen Company, Newark, New Jersey
The Wm. S. Merrell Company, Cincinnati, Ohio
Milk Foundation Inc., Chicago, Illinois
The C. V. Mosby Company, St. Louis, Missouri
M & R Dietetic Laboratories, Inc., Columbus, Ohio
V. Mueller & Company, Chicago, Illinois

N—

Nutrition Research Laboratories, Chicago, Illinois

O—

P—

Parke, Davis & Company, Detroit, Michigan
Pet Milk Company, St. Louis, Missouri
Petrolagar Laboratories, Inc., Chicago, Illinois
Philip Morris & Co. Ltd. Inc., New York, New York
Picker X-Ray Corporation, New York, New York
Prolarmon, Inc., Chicago, Illinois

R—

Ralston Purina Company, St. Louis, Missouri

S—

W. B. Saunders Company, Philadelphia, Pennsylvania

Schering Corporation, Bloomfield, New Jersey
G. D. Searle & Company, Chicago, Illinois
Sharp & Dohme, Inc., Philadelphia, Pennsylvania
J. R. Siebrandt Manufacturing Company, Kansas City, Missouri

S. M. A. Corporation, Chicago, Illinois
Smith, Kline & French Laboratories, Philadelphia, Pennsylvania

E. R. Squibb & Sons, New York, New York
Standard X-Ray Company, Chicago, Illinois
Frederick Stearns & Company, Detroit, Michigan
Surgical Publishing Company, Chicago, Illinois
Sutliff & Case Co. Inc., Peoria, Illinois

T—

U—

V—

W—

White Laboratories, Inc., Newark, New Jersey
Winthrop Chemical Company, Inc., New York, New York
John Wyeth & Brother, Inc., Philadelphia, Pennsylvania

X—Y—Z

X-Ray Equipment Co., Chicago, Illinois
The Zemmer Company, Pittsburgh, Pennsylvania

NOTES ON TECHNICAL EXHIBITS

ABBOTT LABORATORIES, Booth 89

You are most heartily invited to stop here and discuss the newer specialties with the Abbott-trained Professional Representatives in attendance.

The wide assortment of newer products displayed in this exhibit merits your attention and study and your questions are solicited.

Description of the items being shown is prohibited by lack of space, so, COME IN AND SEE US!

A. S. ALOE COMPANY, Booth 87

Messrs. Frazin and Greenwell, A. S. Aloe Company representatives, will be in charge of the display of our company this year. The exhibit will comprise a complete line of American-made Stainless Steel instruments, medical, surgical and laboratory equipment and supplies for the physician. Many new, exclusive items of unusual interest will be shown.

AMERICAN HOSPITAL SUPPLY CORPORATION, Booth 55

On display will be the new Baxter Centri-Vac and Plasma-Vac Containers for preparation of plasma and serum. Also two other well known Baxter products, the Transfuso-Vac, and intravenous solutions in Baxter Vaco-liters.

There will also be the Vasoscillator, or Sanders Bed, a simple rational adjunct in treating of peripheral vascular diseases. The Dickson Paraffin Bath, widely used in certain types of heat therapy. Coli-Bactragen, which protects against peritonitis and is useful in treatment in early stages. American high titre Human Blood Typing Serums.

THE ARLINGTON CHEMICAL COMPANY, Booth 14

The Arlington Chemical Company is featuring its product AMINOIDS, chocolate flavored and plain. Aminoids represent a combination of Amino-Acids and contain vitamins B, C and D. This product has proved of marked therapeutic benefit in underweight, malnutrition cases and in pre- and post-operative feeding, also as a stimulant to metabolism.

Dr. J. H. Frazer, in charge of the exhibit, will be glad to answer any inquiries relative to this product; also inquiries regarding allergic problems pertaining to hayfever, asthma, etc.

THE ARMOUR LABORATORIES, Booth 18

A cordial invitation is extended to all members of the Illinois State Medical Society to visit the Armour Laboratories exhibit. The pituitary gland will be featured this year. Our new book on the subject shows colored sections of the various pituitary cell structures, such as acidophiles associated with growth; basophiles, from which comes the gonadotropic hormone; The sexual cycle of the female is demonstrated graphically. A copy is waiting you at the Armour booth.

Mr. E. M. Scher is in charge.

BARD-PARKER COMPANY, INC., Booth 66

Bard-Parker will exhibit the following products: Rib-Back surgical blades; Renewable Edge Scissors; Hematological Case for obtaining blood samples at the bedside; Ortholator for obtaining accurate dental radiographs; Formaldehyde Germicide and Instrument Containers for the rustproof sterilization of surgical instruments.

BELL & HOWELL COMPANY, Booth 9

A complete display of the latest and finest motion picture equipment for making and showing of professional and personal movies.

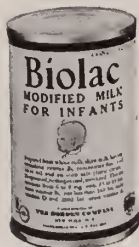
Inspect the latest 8 mm. and 16 mm. cameras, projectors and accessories being used for full color or black and white medical movies in hospitals, medical schools, and health departments for training, research, education and entertainment.

Attendants will be pleased to supply information and to demonstrate equipment.

BILHUBER-KNOLL CORPORATION, Booth 68

We welcome another opportunity to be with you and present our "Council Accepted" medicinal chemicals: Dilaudid — to relieve pain and allay cough; Theocalcin — myocardial stimulant and diuretic; Metrazol — quick acting circulatory and respiratory restorative.

Messrs. Kidwell and Murbach will be glad to give you practical and scientific information on these and other products such as Phyllicin, the well-tolerated theophylline salt, and to further acquaint you with their production in our plant at Orange, New Jersey.

THE BORDEN COMPANY, Booth 93

Visit The Borden Company to see infant foods made entirely from Board-of-Health-inspected milk and designed specifically for infant formulas. Biolac, the distinctive new liquid infant food, affords convenience, economy, and optimal nutrition; it is sterile and requires simply dilution with boiled water to make a complete formula. Preparation of the whole day's feedings is done in only 15 minutes.

Beta Lactose is nature's carbohydrate in an improved, readily soluble form.

Dryco provides formula flexibility for every feeding problem. Also Klim, Merrell-Soule Products, and Irradiated Evaporated Milk.

THE BURDICK CORPORATION, Booth 100

The Burdick Corporation, Milton, Wisconsin, is exhibiting a complete line of Physical Therapy Equipment, including Short Wave Diathermy, Ultra violet and Infra red Lamps, and the Rhythmic Constrictor, a new and important development for the treatment of peripheral vascular disease in the extremities. Doctors are invited to register for the Syllabus, a periodical of Physical Therapy abstracts from current medical literature.

BURROUGHS WELLCOME & CO. (U.S.A.) INC., Booths 63 and 64

Burroughs Wellcome & Co. (U.S.A.) Inc., New York, presents a representative group of fine chemicals and pharmaceutical preparations, together with new and important therapeutic agents of special interest to the medical profession.

CAMBRIDGE INSTRUMENT CO., INC., Booth 75**CAMERON SURGICAL SPECIALTY COMPANY, Booth 79**

See the new Cameron-Schindler Flexible Gastroscope, the Color-Flash Clinical Camera, the Projectoray and the Mirrolite. Latest developments in electrically lighted diagnostic and operating instruments for all parts of the body will also be shown. Of special interest will be the new inexpensive office model Radio Knife, Combination Spark Gap and Tube Electro-Surgical Unit, and other Electro-Surgical Units for cutting, coagulating, desiccation and fulguration in all sizes from the office model to the hospital unit with an abundance of power for the most radical surgery and transurethral prostatic resections.

CARNATION COMPANY, Booths 77 and 78

Be sure to visit the Carnation Company exhibit in which you will see displayed an interesting model of the famous Carnation Milk Farms where cattle breeding and feeding experiments are carried on for the purpose of improving the dairy herds supplying the many Carnation evaporating plants. The story of Carnation's program of supervision of raw milk sources and the careful processing of Irradiated Carnation Milk is also told in an interesting manner.

CHICAGO DIETETIC SUPPLY HOUSE, INC., Booth 83

Foods for sugar and starch restricted diets and foods for allergy diets will be exhibited by the Chicago Dietetic Supply House, Inc. Learn of the large variety of dependable products which are offered to make dieting easier for your patients. Competent dietitians will be present to answer your questions.

CHICAGO PHARMACAL COMPANY, Booth 67

The Chicago Pharmacal Company has desired in this exhibit to give the Illinois physician as complete a picture of a very comprehensive pharmaceutical line as is possible in a small space, with preparations of every form and description known to medical science.

Included will be tablets, pills, ampules, elixirs, syrups, suppositories, powders, ointments, hypodermic tablets and children's preparations.

Our line will no doubt impress itself upon the mind of the observer as being adequate to serve all needs.

CIBA PHARMACEUTICAL PRODUCTS, INC., Booth 108

At our booth will be found the well-known specialties of Ciba Pharmaceutical Products, Inc., including Coramine, Nupercainal, Digifoline, Trasentin, etc. Latest information concerning Perandren, Di-Ovocycin and other gynecogenic preparations will be available, together with literature describing their clinical application where androgenic therapy is indicated. Representatives of the firm will be in attendance and will be glad to answer any questions in regard to the products displayed.

THE COCA COLA COMPANY, Booth 6

Coca-Cola will be served to the delegates at the annual meeting of the Illinois State Medical Society with the compliments of The Coca-Cola Company.

DAVIES, ROSE & COMPANY, LTD., Booth 81

Davies, Rose & Company, Limited, Boston, Mass., hope that you will visit their headquarters. The preparations that this firm is exhibiting have a world-wide reputation. Physiological or chemical tests are made to assure their standardization. Clinical experience vouches for their dependability.

F. A. DAVIS COMPANY, Booth 84

Visit our booth and examine these new publications: Stroud-Cardiology; Loewenberg — Medical Diagnosis and Symptomatology; Bland-Montgomery — Obstetrics; Piersol — Cyclopaedia of Medicine, Surgery and Specialties; Reimann — Treatment in General Medicine; Loewenberg — Endocrinology; Smith — Proctology; Taber — Cyclopedic Medical Dictionary; Mullen — Handbook of Treatment.

THE DeVILBISS COMPANY, Booth 10

The DeVilbiss Company will exhibit at the 1941 convention of the Illinois State Medical Society which will be held at the Palmer House in Chicago.

The most advanced line of instruments for scientific application of solutions to the nose and throat in office treatment or to prescribe for home use will be on display.

Also included in the exhibit will be illustrations showing the superior coverage offered by the atomizer in the application of solutions to the nose and throat. These are based on x-ray research.

Copies of the illustrations for reference may be secured from L. H. Smock who will be in charge of the display.

A. DIADUL & SONS, INC., Booth 36

Designed by science and medical arts for physical deficiencies, fractures, injuries, treatment of symptoms in disease and rehabilitation, you will find our surgical appliances more than adequate. All our appliances are made of Lite-Wate materials, are physiologically and anatomically correct, and produce the results that the medical men reasonably expect wherever bracing, support, pressure, fixation, suspension or traction are necessary. Stop at our booth and see COMFORT TRUSSES THAT FIT.

DOAK COMPANY, CLEVELAND, OHIO, Booth 23

Doak Company pioneers in colloidal chemistry are exhibiting the original colloidal Sulfur Diasporal as reported by Sullivan, Argy, Wheeldon, Senturia, Woldenberg and others for treatment of chronic arthritis.

Doak Company also exhibits a number of dermatological specialties, — Tersus (non-allergic detergent), Cot-Tar (an elastic application of tar), Lotion Alsulfa (a liquid cream of colloidal sulfur), Meroxide Paste (for impetigo), Mycofan and Podosan Powder (for fungus diseases), Antirhus Cream (poison ivy preventative No. 346).

DOHO CHEMICAL CORPORATION, Booth 60

The Auralgan exhibit shows a modelled and enlarged human auricle together with complete series of three dimensional ear drums, each depicting a different pathologic condition based upon actual case observation. These drums were prepared with strict scientific accuracy for their interesting and instructive advancement of medical education.

Our teaching film, "Otoscopy," in sound and color which also will be shown, is available without any charge, to any medical school, hospital or study group.

ELI LILLY AND COMPANY, Booth 86

Eli Lilly and Company will demonstrate the germicidal efficacy of 'Merthiolate' (Sodium Ethyl Mercuri Thiosalicylate, Lilly) and the compatibility of the antiseptic with body cells and fluids. Other new and useful products will be featured.

C. B. FLEET COMPANY, INC., Booth 34

PHOSPHO-SODA (Fleet), a saline laxative, has been presented to the medical profession for over fifty years. This eliminant is suggested when a rapid non-gripping action is desired. It is recommended in gall bladder disorders.

The profession is cordially invited to visit the booth of the C. B. Fleet Company, Inc.

FLINT, EATON & COMPANY, Booth 2

You will be interested in the new dosage form of calcium gluconate on display at our booth. Flint, Eaton & Company representatives will welcome you and explain the advantages of Calcium-Gluconate-Effervescent. This new product offers a dosage form which is palatable as well as economical.

H. G. FISCHER & COMPANY, Booth 11

H. G. Fischer & Company 1941 models of x-ray and short wave apparatus are so distinctive, both in improved performance and in various instances greatly lowered in price,

that every physician should consider inspection a convention obligation. The complete H. G. Fischer & Company line includes shockproof x-ray apparatus, short wave units, combination cabinets, galvanic and wave generators, ultra violet and infra-red, lamps, and many other units, accessories and supplies.

Physicians attending the convention are invited to ask for demonstration of apparatus in which they are interested and to consult with Fischer representatives regarding technics made available by Fischer apparatus.

GENERAL ELECTRIC X-RAY CORPORATION, Booth 1

A stop and a look at the G-E X-Ray and Electromedical devices for your practice, will suggest that you listen to the facts and learn why it is that the G-E Model R-39 combination Radiographic and Fluoroscopic X-Ray Unit; the G-E Model D-3 combination Radiographic and Fluoroscopic Shockproof Mobile X-Ray Unit; and the Model F-3 Shockproof X-Ray Unit have a range of usefulness not found in other comparable X-Ray apparatus.

Let us demonstrate the Model B Inductotherm, a short wave diathermy unit of proven effectiveness; the G-E Model B Portable Electrocardiograph; clinically accurate; and the Model F quartz lamp for Ultraviolet Irradiation.

Visit our showroom and see the other apparatus that exhibit space limitations prevent our bringing to you.

GERBER PRODUCTS COMPANY, Booth 110

The complete line of Gerber Baby Foods will be on display — Dry, Pre-Cooked Cereal Food, fifteen Strained Foods and ten Junior Foods. Booklets are available for distribution to mothers or patients on special diets as well as professional literature, and will be sent to registrants for examination.

THE G. F. HARVEY COMPANY, Booths 88 and 89

The G. F. Harvey Company, one of the oldest pharmaceutical concerns in the country, which since its establishment in 1880, has been the manufacturer of ethical products for the medical profession, will exhibit its new Bland antiseptic Oilzo, together with a permanently stable, fool-proof form of digitalis powdered leaves, Digiseals.

H. J. HEINZ COMPANY, Booth 96

The makers of Heinz Strained and Junior Foods appreciate the confidence which the members of the Illinois State Medical Society have expressed in their recommendation of these foods for infant feeding and special diets.

Some of these foods are on display as well as various literature — newest of which is the Nutritional Chart, ninth edition, and Nutritional Observatory.

Mr. F. B. Heard and Mr. O. L. Cluck are at your service and will welcome members and friends at the exhibit.

HILLE LABORATORIES, Booth 105

Hille Laboratories, specializing in MEDICINAL COLLOIDS OF HEAVY METALS such as Gold, Silver, Mercury, Bismuth, Copper and Iron, look forward to your visit at their booth during the 1941 annual meeting.

HORLICK'S MALTED MILK CORPORATION, Booth 101

You are invited to visit the Horlick exhibit of Horlick's, the original Malted Milk, powder and tablets. Horlick's is a distinctive natural food combination containing the basic nutritive principles of full-cream milk and malted grain. Its ease of digestion, freedom from fiber and roughage, together with its rich calcium and phosphorus content, particularly recommend it to the physician.

HYNISON, WESTCOTT & DUNNING, INC., Booths 69 and 70

Prominent among the products exhibited with be Mercurochrome, now in its 21st year of acceptance by the Council on Pharmacy and Chemistry of the American Medical Association. Thantis Lozenges, Cobra Venom Solution and Lutein Solution Ampules will also be displayed, in addition to the diagnostic solutions and apparatus supplied by the manufacturers. The clinical effectiveness of Lutein Solution, an aqueous extract of corpus luteum, in the treatment of menopausal disturbances and its effectiveness in obstetrical complications will be illustrated by especially prepared diagrams.

"THE 'JUNKET' FOLKS", Booth 102

At this booth "The 'Junket' Folks," Chr. Hansen's Laboratory, Inc., will serve rennet-custards made with either "Junket" Rennet Tablets or "Junket" Rennet Powder. There will also be a display of "Junket" Brand Food Products.

Enlarged photographs show how the rennet enzyme in rennet-custards transforms milk into softer, finer curds. Rennet-custards are widely recommended for infants, children, convalescents, post-operative cases and as a delicious, healthful dessert for the whole family. Fully informed attendants will be on duty.

THE LAKESIDE LABORATORIES, INC., Booth 20

Lakeside's exhibit will illustrate the intensive control and research procedures which are essential in manufacturing products for the medical profession. Progress in these fields is especially important in the preparation of ampule medications.

LEA & FEBIGER, Booth 58

Lea & Febiger will exhibit among their new works, Kraines' Neuroses and Psychoses, Portis on The Digestive System, Lewin on The Foot and Ankle, Rony on Obesity and Leanness, and Adair's Obstetrics and Gynecology. New editions will be shown of Joslin's Treatment of Diabetes, Joslin's Diabetic Manual, Comroe on Arthritis, Fishberg on Heart Failure, Cushny's Pharmacology, Haden's Hematology, Simon's Common Contagious Diseases, Boyd's Internal Diseases and other new publications.

LEDERLE LABORATORIES, INC., Booth 35

The Lederle Laboratories, Inc., will feature a continuous motion picture showing the latest development in the treatment of Parkinsonism.

There will also be displayed the Lederle line of Hay Fever Products which are of interest at this season of the year.

Also displayed will be Liver Extracts in various unit concentrations, Globulin Modified Antitoxins, low volume and practically reaction free materials, as well as most of the other Lederle products.

THOMAS LEEMING & COMPANY, Booth 57

Thomas Leeming & Company, Inc., invites you to inspect a new exhibit incorporating full color photographs of a number of pathologic skin conditions frequently encountered in practice. These photographs, from the collection of an outstanding dermatologist, demonstrate the typical lesions in each of the conditions, thus facilitating accurate diagnosis. The exhibit deals with the use of Calmitol in the control of pruritis associated with such conditions.

Also exhibited will be two newer preparations, Amend's Solution (non-toxic, aqueous iodine solution for internal administration) and Magmasil, a unique magma of magnesium trisilicate, for the treatment of peptic ulcer.

LIBBY, McNEILL & LIBBY, Booth 16

You are cordially invited to visit Libby, McNeill & Libby's exhibit where attendants will point out the merits of homogenized baby foods, chopped foods and evaporated milk. Libby's special method of homogenization makes Libby's baby foods extra smooth, extra easy to digest.

J. B. LIPPINCOTT COMPANY, Booth 80

Among the interesting Lippincott Publications on display will be Kugelmass' "Newer Nutrition in Pediatric Practice" and Becker and Obermayer's "Modern Dermatology and Syphilology," as well as "Functional Disorders of the Foot" by Dickson and Diveley which has already gone into a second printing. Leaman's brand new book, "Management of the Cardiac Patient" will also be displayed. Other interesting works include Thorek's "Modern Surgical Technic," Rigler's "Outline of Roentgen Diagnosis," Barborka's "Treatment by Diet" and many others.

A. E. MALLARD, Booth 13

A. E. Mallard, manufacturing chemist, of Detroit, will display modern pharmaceutical products which are in keeping with the present trend of medical therapy. These products are manufactured under strict laboratory control, and are guaranteed to be true to label and of reliable potency, and are the result of knowledge gained in 30 years experience in pharmaceutical research and manufacturing. Dan L. Hovis, Peter J. Roth, Ben R. Smith and E. A. Wherry, representatives, will be on hand to welcome you.

MEAD JOHNSON & COMPANY, Booth 95

Mead Johnson & Company will exhibit several new products in addition to Dextro-Maltose, Pabulum and Oleum Percomorphum. They will also have on display various examples of the slogan, "SERVAMUS FIDEM" — We Are Keeping the Faith.

THE MEDICAL PROTECTIVE COMPANY, Booth 76

The most exacting requirements of adequate liability protection are those of the professional liability field. The Medical Protective Company, specialists in providing protection for professional men, invites you to confer, at their exhibit, with the representative there. He is thoroughly trained in Professional Liability underwriting.

MELLIN'S FOOD COMPANY, Booth 61

Physicians are cordially invited to call at our booth to place before our representatives all questions regarding the composition of Mellin's Food and its usefulness in infant and adult feeding. It is suggested that constipation in infancy and the preparation of nourishment for adult patients who are far below normal as a result of prolonged illness or faulty diet are particularly interesting topics for discussion.

THE MENNEN COMPANY, Booth 106

The Mennen Company will exhibit their two baby products — Antiseptic Oil and Antiseptic Borated Powder. The Antiseptic Oil is now being used routinely by more than 90% of the hospitals that are important in maternity work. Be sure to register at the Mennen exhibit and receive your kit containing demonstration sizes of their shaving and after-shave products; also, for the lucky number prize drawing to be held at the close of the convention for DeLuxe Fitted Leather Toilet Kits.

THE WM. S. MERRELL COMPANY, Booth 5

The Merrell exhibit will feature several new therapeutic agents of genuine interest to the practicing physician, in addition to a large number of prescription specialties of established usefulness. You are cordially invited to drop by and visit with us.

MILK FOUNDATION INC., Booth 53

The exhibit will illustrate the use of fresh Grade A Milk in infant feeding formulas, and has been approved by the Council on Foods. We will describe the preparation of the formula and also the advantages of the use of the fresh product.

THE C. V. MOSBY COMPANY, Booth 59

Doctors attending the Illinois State Medical Society convention are cordially invited to visit the Mosby Booth — there to inspect the new publications which will be on display. Outstanding new volumes on surgery, dermatology, nervous and mental diseases, heart diseases, x-ray, obstetrics and gynecology, and practice of medicine will be shown. Browse through this new material at the Mosby Booth.

M & R DIETETIC LABORATORIES, INC., Booth 12

M & R Dietetic Laboratories, Inc., will display Similac and powdered SoFurd. Representatives will be glad to discuss the merits and suggested application of these products.

V. MUELLER & COMPANY, Booths 3 and 4

The V. Mueller & Company (Chicago) exhibit will include a number of new instruments as well as several new pieces of surgical equipment for both the surgeon and the hospital. From what are perhaps the largest and most comprehensive lines of such equipment in the country today, representative samples of all types of fine surgeon's instruments will be included in the display. Visit us — see the things you read about.

NUTRITION RESEARCH LABORATORIES, Booth 38

By means of illuminated x-rays and lifelike plaster casts of actual case histories, the scientific exhibit of Nutrition Research Laboratories at Chicago, will show the successful results obtained from ERTON therapy in the treatment of arthritis.

Also featured will be BEZON, a Natural High Potency Vitamin B Complex.

PARKE, DAVIS & COMPANY, Booth 94

Featured in the Parke-Davis Exhibit will be the sex hormones, Theelin and Theelol; antisiphilitic agents, such as Mapharsen and Thio-Bismol; posterior lobe preparations, including Pituitrin, Pitocin and Pitressin; and various Adrenalin Chloride Preparations.

PET MILK COMPANY, Booths 90 and 91

An actual working model of a milk condensing plant in miniature will be exhibited by Pet Milk Company.

This exhibit offers an opportunity to obtain information about the production of Irradiated Pet Milk and its uses in infant feeding and general dietary practice. Miniature Pet Milk cans will be given to each physician who visits the Pet Milk Booths.

PETROLAGAR LABORATORIES, INC., Booth 85

This year Petrolagar Laboratories, Inc. will offer, in addition to samples of the five types of Petrolagar, an interesting selection of descriptive literature and anatomical charts. Ask the Petrolagar representatives to show the HABIT TIME booklet. It is a welcome aid for teaching bowel regularity to your patients.

PHILIP MORRIS & CO. LTD. INC., Booth 33

Philip Morris & Company will demonstrate the method by which it was found that Philip Morris Cigarettes, in which diethylene glycol is used as the hygroscopic agent, are less irritating than other cigarettes. Their representative will be happy to discuss researches on this subject, and problems on the physiological effects of smoking.

PICKER X-RAY CORPORATION, Booth 109

Visitors at the Picker X-Ray Corporation's booth will have an opportunity of seeing the well-known Picker-Waite "Century". This diagnostic unit provides for radiography and fluoroscopy in all positions from the vertical to the Trendelenberg. The table may be either hand or motor operated, and the table has an optional equipment, a two position spot film attachment for instantaneous radiography during fluoroscopy.

There will also be on display a number of newly developed x-ray accessories and diagnostic opaque chemicals.

PROLARMON, INC., Booth 56

Prolarmon, Inc., formerly Maggot Products Company, distributors of Maggot Filtrate Products, will present at their booth a rather unusual film entitled:

THE LIFE CYCLE OF THE LUCILIA SERICATA (Blow Fly)

This film is done in full color and presents for the first time, the life cycle of the blow-fly in conjunction with the laboratory production of Maggots.

Visitors to the convention may see this picture by stopping at our booth where the picture will be run continuously during the hours that the exhibition room is open.

You are cordially invited to view this presentation at your leisure, and at the same time you may obtain valuable information from the individuals in charge of our booth regarding clinical use of Maggot Filtrate Products.

RALSTON PURINA COMPANY, Booth 17

Ralston Purina Company cordially invites Illinois physicians to register at their booth, to receive:

Low Calorie Diets — 1200 and 1700 calories — complete diets giving wide variety of foods.

Allergy Diets — wheat, egg and milk-free food lists and special recipes.

Laboratory Research Reports — on whole grains and their importance as a source of vitamins and minerals in the diet.

Samples of Ralston Wheat Cereal and Ry-Krisp, the Whole Rye water.

W. B. SAUNDERS COMPANY, Booth 71

This publishing house will have on display their complete line of books of interest to physicians and specialists. Of particular interest are Graybiel & White's "Electrocardiography in Practice," the new Griffith & Mitchell's "Pediatrics," Krusen's new "Physical Medicine," Novak's "Obstetrical and Gynecological Pathology," Walters & Snell's "The Gallbladder and its Diseases," the new (1941) Mayo Clinic Volume, Pelouze's "Office Urology," the current series of the Medical Clinics of North America with their Symposia on common, everyday diseases and conditions, the new Cecil's "Medicine," new Ewing's "Neoplastic Diseases," Wilder's "Clinical Diabetes," and a number of other important new books and new editions.

SCHERING CORPORATION, Booth 15

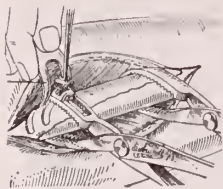
The Schering exhibit actually displays the entire group of highly advanced Schering hormone preparations (including Oretin-M, the new orally effective tablets for male hormone therapy), distinguished for their potency, absolute purity, and economy in actual practice. Other specialized products of interest include Neo-Iopax, the Council-accepted urographic medium, and a new preparation of Ludozan, the antiacid having strikingly valuable physiological properties. Members of the Medical Research Division are present to discuss endocrine or other problems.

G. D. SEARLE & COMPANY, Booths 73 and 74

G. D. Searle & Co. present the Phantoscope. This ingenious device accurately reproduces the fluorescent appearance of a chest and illustrates the alterations in cardiac pace, rhythm and contour in a variety of pathologic heart conditions. A number of Searle representatives will be in attendance at this exhibit, and will be pleased to confer with members of the profession concerning Searle Products.

SHARP & DOHME, INC., Booth 88

Sharp & Dohme will have their new modern display this year, featuring 'Delvinal' Sodium, 'Lyovac' Bee Venom Solution, and other 'Lyovac' biologicals. There will also be on display a group of new biological and pharmaceutical specialties prepared by this house, such as 'Propadrine' Hydrochloride products, 'Rabellon', 'Padrophyl', 'Riona', 'Depropanex', and 'Ribothron'. Capable, well-informed representatives will be on hand to welcome all visitors and furnish information on Sharp & Dohme products.

J. R. SIEBRANDT MANUFACTURING CO., Booth 19

In addition to our complete line of splints, we invite you to see a demonstration at our booth of a simple technic for wiring certain type of fractures. By using our Goodwin Universal Bone Clamp, the entire operation from drilling holes through fragments to the tightening of the wires, is all done with this instrument.

S. M. A. CORPORATION, Booth 72

Among the technical exhibits at the convention this year is an interesting new display which represents the selection of infant feeding and vitamin products of the S.M.A. Corporation.

Physicians who visit this exhibit may obtain complete information, as well as samples, of S-M-A Powder and the special milk preparations — Protein S-M-A (Acidulated), Alerdex and Hypo-Allergic Milk.

SMITH, KLINE & FRENCH LABORATORIES, Booth 92

Smith, Kline & French Laboratories will exhibit their line of medical specialties at the meeting this year. The latest information on these products will be available, and the representative will be delighted to discuss these preparations with interested physicians.

E. R. SQUIBB & SONS, Booth 97

A number of new and interesting Vitamin, Glandular, and Biological and Chemotherapeutic Specialties will be featured in the Squibb Exhibit.

Well informed Squibb Representatives will be on hand to welcome you and to furnish any information desired on the products displayed.

STANDARD X-RAY COMPANY, Booth 82

Do not fail to stop at the Standard X-Ray Company booth where we are exhibiting x-ray apparatus designed primarily for installation in the office of a general practitioner or specialist.

The Standard Model "EBRF" units occupy a minimum amount of space for installation, yet offer facility for all types of radiographic and fluoroscopic work. If desired, this same unit may also be used for superficial x-ray therapy. We will welcome an opportunity to demonstrate this apparatus to you.

FREDERICK STEARNS & COMPANY, Booth 107

Doctors are cordially invited to visit our attractive convention booth to view and discuss outstanding contributions to medical science developed in the Scientific Laboratories of Frederick Stearns & Company.

Our professional representatives will be pleased to supply all possible information on the use of such outstanding products as Neo-Synephrin Hydrochloride for intranasal use, Mucilose for bulk and lubrication, Ferrous Gluconate, Potassium Gluconate, Gastric Mucin, Susto, Trimax, Appella Apple Powder, Nebulator with Nebulin A, and our complete line of Vitamin Products.

SURGICAL PUBLISHING COMPANY, Booth 8

"Translites" will be employed in an interesting demonstration of the pages of this "Journal for Surgeons by Surgeons," its superb printing and illustration, and the character of its material on all phases of surgery. Illustrations in color, reproductions of famous portraits, and numerous pages on surgical technic will be shown.

SUTLIFF & CASE CO. INC., Booth 48

THIO-CARA (Sutliff & Case) contains in each fluid ounce: Potassium Thiocyanate 12 gr., combined with a well-balanced amount of aromatic cascara to induce elimination so often essential in treating arterial hypertension. It contains no sugar. (Packaged in pints and gallons)

THIOCYAN-TABS (Sutliff & Case) are compounded with the calcium derivative of the thiocyanate; these tablets are specially (red) coated to safeguard the stability of the active principle, and so that disintegration of the tablets is delayed until they reach the intestinal tract. The tablets may be used interchangeably with THIO-CARA, especially where mild laxative action is not deemed necessary. (Packaged in bottles of 100, 500 and 1000)

WHITE LABORATORIES, INC., Booth 65

White Laboratories, Inc., will present White's Cod Liver Oil Concentrate Liquid, Tablet and Capsule and White's Thiamin Chloride Tablet — all Council-Accepted.

Well trained, courteous representatives will be in attendance to discuss the practical advantages provided by Cod Liver Oil Concentrate as an economical and convenient measure of Vitamin A and D prophylaxis and therapy. Pertinent information concerning our newer knowledge of the

vitamins and vitamin deficiency states, together with literature descriptive of the clinical merit of the products of White Laboratories, will be offered for the registrants consideration.

WINTHROP CHEMICAL COMPANY, INC., Booth 32

Winthrop Chemical Company, Inc., extends a cordial invitation to all physicians to visit their booth. Of particular interest at this time is Sulfathiazol, the latest chemotherapeutic triumph. Representatives will be glad to discuss this preparation as well as several other recent contributions made by this firm.

Your visit will also give you an opportunity to obtain booklets, many of which are handsomely illustrated, on Salyrgan-Theophylline, Diodrast, Atabrine Dihydrochloride, Avertin with Amylene Hydrate, Novocain and Pontocaine Hydrochloride.

JOHN WYETH & BROTHER, INC., Booth 62

You are cordially invited to visit our booth where John Wyeth & Brother will exhibit the following pharmaceutical specialties:

AMPHOJEL — Wyeth's Alumina gel for the management of peptic ulcer and hyperacidity.

BEPRON — Wyeth's Beef Liver with Iron, for the nutritional anemias.

WYETH'S B COMPLEX ELIXIR — The natural Vitamin B Complex.

BEWON ELIXIR — Wyeth's palatable appetite stimulant and vehicle.

KAOMAGMA, WYETH'S MAGMA OF ALUMINA AND KAOLIN — for the treatment of diarrheas and colitis.

A-B-M-C OINTMENT — For the relief of arthritic pain.

X-RAY EQUIPMENT COMPANY, Booths 103 and 104

X-Ray Equipment Company will display the Mattern series 'MX' combination shockproof, general diagnostic, fluoroscopic and Bucky radiographic tilt table x-ray unit. The newly designed automatic push button control will be shown which has safety features never before available in x-ray apparatus.

The series 'MX' unit is available in 60, 100 or 200 milliamperes capacity.

We will also show the combination vertical fluoroscopic and radiographic unit, as well as the deluxe 20-80 Mobile x-ray unit. Visit the X-Ray Equipment Company's booths and learn how, at surprisingly low cost, you can have the finest x-ray facilities.

THE ZEMMER COMPANY, Booth 24

The Zemmer Company extends a cordial invitation to every member of the Illinois State Medical Society to visit their exhibit where they will display a number of their leading pharmaceutical products.

The exhibit will be in charge of Mr. C. N. Lennox assisted by Mr. A. P. Carroll and Mr. J. W. Kern.

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Chicago, Illinois

May 20, 21, 22, 1941

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Chicago Medical Society

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The Fourteenth Annual Convention Of The Woman's Auxiliary To The Illinois State Medical Society CHICAGO, ILLINOIS

TUESDAY, MAY 20, 1941

9:00 A.M.	Registration — Palmer House Club Building.
10:00 A.M.	Pre-Convention Board Meeting. (For Board Members only) Mrs. Harry J. Dooley, presiding.
11:00 A.M.	Symposium on Problems of the Auxiliary. (Open to all physicians' wives and guests) Mrs. Wm. Raim, presiding.
12:30 Luncheon	— Palmer House. (Open to all physicians' wives and guests) Mrs. Harry J. Dooley, presiding. Mrs. John Wolfer, Local Chairman.
	Invocation—The Reverend George L. Warth, S. J., Regent of Loyola University.
	Greetings—Hon. Edward J. Kelly, Mayor of Chicago.

	Address of Welcome—Mrs. W. C. Bornemeier, Chicago.
	Response—Mrs. E. W. Burroughs, Ridgway.
	Address—Frank F. Maple, M.D., President, Chicago Medical Society.
	Convention Announcements, Mrs. E. Christofferson, Chicago.
2:00 P.M.	Opening Business Session. Credentials and Registration Report, Mrs. M. A. Nix, Princeton.
	Convention Announcements, Mrs. E. Christofferson, Chicago.
	Roll Call.
	Minutes.
	Treasurer's Report.
	Auditor's Report.

Annual Reports of Officers.
Annual Reports of Councilors.
Adjournment until 9:30 A.M. Wednesday, May 21.

WEDNESDAY, MAY 21, 1941

9:30 A.M. Palmer House Club Building.
Memorial Services, conducted by Mrs. Clyde R. Landis.
Solo — "Lord's Prayer."—Mrs. Louis Draeger
In Memoriam.
Memorial Roll Call.
"Resignation" Longfellow.
Candle Light Service.
Remembrance Flowers.—Mrs. Clyde R. Landis.
Music During Roll Call.—Mrs. Louis Draeger.
One Minute of Silent Prayer.
"Taps"—Bugler, Kenneth McDonald, Member of
Ft. Dearborn Post Sons of American Legion.
Roll Call.
Reading of Minutes of previous meeting.
Report of Credentials and Registration, Mrs. M. A. Nix, Princeton.
Convention Announcements, Mrs. E. Christoffer-son, Chicago.
Annual Reports of Chairmen of Standing Com- mittees.
Annual Reports of County Presidents.
Reports of Special Committees.
Report of Resolutions Committee.
Final Report of Credentials and Registration Committee, Mrs. M. A. Nix, Princeton.
Report of Nominating Committee.
Election of Officers.
Installation of Officers.
Response—Mrs. Harry Otten, Springfield.
Presentation of President's Pin—Mrs. R. K. Pack-ard.

Adjournment.

1:00 P.M. President's Luncheon — Palmer House Club Building.
Mrs. Harry Dooley, presiding.
Mrs. Frederick Tice, Local Chairman.
Co-chairman, Branch Presidents, Cook County Auxiliary.
Greetings—Dr. J. P. Simonds, President-Elect, Chicago,
Guest Speaker—Major E. Mann Hartlett, State Medical Officer of Cook County.
3:30 P.M. Post Convention Board Meeting. (Board members only)
Mrs. Harry Otten, presiding.

SOCIAL FUNCTIONS FOR ALL LADIES

TUESDAY, MAY 20, 1941

12:30 Luncheon—Palmer House Club Building.
3:45 P.M. Tour of the American Rooms in Miniature by Mrs. James Ward Thorne, Art Institute.
7:00 P.M. Dinner—Lake Shore Club, 850 N. Lake Shore Drive.
Fashion Review, Saks Fifth Avenue.
(Private parking for cars.)

WEDNESDAY, MAY 21, 1941

1:00 P.M. President's Luncheon—Palmer House Club Building.
4:00 P.M. Musicale—Tea—Arts Club, 400 N. Michigan Avenue.
Mrs. Nelson Percy, Local Chairman.
7:00 P.M. President's Dinner—Palmer House.

Post-Convention Clinics

FRIDAY, MAY 23rd

WOMEN AND CHILDREN'S HOSPITAL, 1600 West Maypole Avenue

8:00-12:00 A.M. Surgery
10:00-2:00 P.M. Obstetrics
Medicine
Pediatrics
Dispensary

ILLINOIS RESEARCH AND EDUCATIONAL HOS- PITAL, 1819 West Polk Street

8:30 A.M. General Surgical Operations — Warren H. Cole
8:30 A.M. Ophthalmology — H. Beard
9:00 R.M. Oral Surgery — Louis W. Schultz
1:30 P.M. Gynecological Operations — Frederick Falls

CHILDREN'S MEMORIAL HOSPITAL, 707 Fullerton Avenue

12:00 Noon. Pathological Conference
ST. ANNE'S HOSPITAL, 4950 Thomas Street
11:00 A.M. Clinical Staff Meeting
ENGLEWOOD HOSPITAL, 60th and Green Streets
11:00 A.M. Management of Perforated Peptic Ulcers — H. A. Fitzmaurice
Presentation of Heart Cases — R. B. Stoops, A. K. Peterson
Urinary Calcium in the Newborn, S. M. Abelson

SOUTH SHORE HOSPITAL, 8001 Luella Avenue
10:00 A.M.-12:00 Noon Pellagra — C. S. Duner
The Bleeding Duodenal Ulcer — E. O. Larson
Gastric Resection — Hugh N. MacKechnie
Pleural Effusions — F. E. Mead, E. A. Proby
The Application of the Male Sex Hormones — Louis D. Smith
Sinusitis — J. W. Stanton

EDGEWATER HOSPITAL, 5700 North Ashland Avenue
9:00 A.M. X-Ray Demonstrations of Intestinal Ob- struction — N. Zeitlin

10:30 A.M. The Modern Hospital Nursery — H. Sered
10:30 A.M. Prostate Resection — D. Schlapik
11:00 A.M. Treatment of Fractures of the Neck of the Femur — Fred Shapiro
11:30 A.M. Pathological Demonstrations — Speci- mens — I. Pilot

LORETTO HOSPITAL, 645 South Central Avenue

8:00-9:00 A.M. Cholecystectomy — Sturm Dorf and Perineorrhaphy — N. J. Balsamo, H. T. Little
9:00-10:00 A.M. Pelvic Laparotomy — E. P. Vaughan, J. Lally

10:00-11:00 A.M. Dry Clinic — A. E. Stewart, L. B. Newman

10:00-11:00 A.M. Operative Clinic — F. M. Sylvester
11:00-12:00 Noon Operative Clinic — L. F. Plzak, F. Kotalik

MOUNT SINAI HOSPITAL, 2750 West 15th Place

8:00-11:00 A.M. Gastro-Intestinal Surgery — A. A. Strauss and Associates
Genito-urinary Surgery — H. C. Rolnick and Associates

Oral Surgery — Emil Aison
Plastic Surgery of the Nose — M. R. Guttman
Thyroidectomy — J. M. Mora
New Technique for Hernioplasty — D. A. Willis
Operations — E. I. Greene
Operations — V. L. Schragar
11:00-12:00 Noon Clinical Pathology Conference — I. Davidsohn

AUGUSTANA HOSPITAL, 411 Dickens Street
8:00 A.M. to 12:00 Noon Surgical Cases and Dry Clinics — John Christenson, A. T. Lundgren,

Earl Garside, William Boice, John Nuzum, Rudolph Oden

CHICAGO MEMORIAL HOSPITAL, 660 Groveland Park

9:00 A.M. Dry Clinic — Sciatica and Low Back Pain — Edward L. Compere

9:00 A.M. Operation — Vein Ligation — Richard E. Heller

10:00 A.M. Dry Clinic — Why Induce Labor in a Normal Pregnant Woman? — William F. Hewitt

10:00 A.M. Operation — A. Removal of a Semilunar Cartilage of Knee — Arthur H. Conley

B. Open Reduction of a Fractured Neck of the Femur — Arthur H. Conley

11:00 A.M. Dry Clinic — Pruritis Ani — Charles J. Drueck

11:30 A.M. Dry Clinic — Gastric Resection with the Use of the DePetz Instrument — M. L. Weinstein, Lawrence Adams

2:30 P.M. Dry Clinic — With motion pictures — The Surgical Treatment of Tremor — Paul C. Bucy

2:30 P.M. Dry Clinic — A. Chronic Suppurative Otitis, Meningitis Hemiplegia — Alfred Lewy

B. Osteomyelitis Superior Maxilla — Alfred Lewy

3:00 P.M. Dry Clinic — Interesting and Unusual Radiographs — George M. Landau

4:00 P.M. Dry Clinic — Relation of Sudden Fall in Blood Pressure to Myocardial Infarction — Walter S. Priest

4:30 P.M. Dry Clinic — Weight Reduction in Endocrine Obesity (Lantern Slides) — M. M. Kunde

4:30 P.M. Exhibit — Plastic Procedures — John F. Pick.

MICHAEL REESE HOSPITAL, 2839 Ellis Avenue

8:00-12:00 Surgical Clinics

Operative Clinic in Orthopedics — Philip Lewin, Sidney Sideman, Jerome Finder

Excretion Urography — Alfred E. Jones, Robert A. Arens

Urologic Surgery — Operative Clinic — Frederick Lieberthal, Harry Rolnick, Irwin Koll

Operative Gynecological Clinic — Irving Stein, Joseph Baer, Julius Lackner, Ralph Reis

Abdominal Surgery — Alfred Strauss, Siegfried Strauss, Herman Strauss

Gallbladder Surgery — Ralph Bettman

Gastro-intestinal Surgery — Morris Parker

Operative Clinic — James Patejdl

1:30-4:30 P.M. Friday afternoon

1:30-1:45 P.M. Pre-operative Radiation Treatment in Breast Carcinoma — Erich Uhlmann

1:45-2:15 P.M. Tuberculosis of the Skin (Lantern Slides) — M. R. Caro

Pinta — Discussion of the Disease with Presentation of Gases — E. P. Lieberthal, T. Benedek

Eczema and Contact Dermatitis — Herbert Rattner

Itching (Pruritus in Medicine and in Dermatology) Discussion of etiology and treatment — Max Wien

2:15-2:30 Neurology

Surgical Treatment of Intractable Pain around the Head

2:30-3:45 Medicine

Therapy of Bleeding Ulcer — Jacob Meyer

Sternal Puncture — Technic — Steven O. Schwartz

Indications for Sternal Puncture and the Significance in Diagnosis, Prognosis, and Treatment — Raphael Isaacs

Recent Observations in Hypertension — Louis N. Katz

Electrolyte Therapy of Some Endocrine Dysfunc-

tions — S. Charles Freed

2:30-3:45 P.M. Early Diagnosis of Liver Disease by Cephalin-cholesterol Flacculation Test — David Rosenberg

Newer Tests in Diagnosis of Thyroid Disease

— Robert C. Levy

CHICAGO EYE, EAR, NOSE & THROAT HOSPITAL, 231 West Washington Street

9:00-11:00 A.M. Ear, Nose and Throat — Clinical Demonstration.

Diagnosis of Impairment of Hearing — Louis Savitt.

11:00 A.M.-1:00 P.M. Clinic, Louis Savitt.

9:00-11:00 A.M. Eye Clinic.

Muscle Clinic — Albert G. Peters.

11:00 A.M.-1:00 P.M. Eye Surgery — Oscar B. Nugent.

ST. LUKE'S HOSPITAL, 1431 Michigan Avenue

9:00 A.M. Staff Clinic

Pathological Material and Clinical Cases

SATURDAY, MAY 24th

WOMEN AND CHILDREN'S HOSPITAL, 1660 West Maypole Avenue

10:00 A.M.-12:00 Surgery

Obstetrics

Medicine

Pediatrics

Dispensary

ILLINOIS RESEARCH AND EDUCATIONAL HOSPITAL, 1819 West Polk Street

8:30 A.M. General Surgical Operations — R. B. Malcolm

8:30 A.M. Ear, Nose and Throat Operations — Francis Lederer

9:00 A.M. Neurosurgical Operations — Eric Oldberg

1:30 P.M. Bronchoscopy — Paul Holinger

EDGEWATER HOSPITAL, 5700 North Ashland Avenue

9:00 A.M. X-Ray Demonstrations of Intestinal Obstruction — N. Zeitlin

10:30 A.M. The Modern Hospital Nursery — H. Sered

10:30 A.M. Prostate Resection — D. Schlapik

11:30 A.M. Pathological Demonstrations — Specimens — I. Pilot

AUGUSTANA HOSPITAL, 411 Dickens Street

8:30 A.M. to 12 General Surgical Clinic — Nelson Percy, Oscar Nadeau

MICHAEL REESE HOSPITAL, 2839 Ellis Avenue

8:00-12:00 Surgical Clinics

Operative Genito-Urinary Clinic — Jack S. Grove, Irving Shapiro, Jos. Eisenstaedt

Operative Orthopedic Clinic — D. H. Levinthal, Irving Wolin, Frank Glassman

Gynecological Clinic — Arthur Koff, L. E. Frankenthal, Jr., Michael Leventhal, A. F. Lash

8:00-12:00 Abdominal Surgery, Samuel Goldberg

Vascular Surgery — Samuel Perlow

General Operative Surgical Clinic — Leo Zimmerman

General Operative Surgical Clinic — Leon Aries

CHICAGO EYE, EAR, NOSE & THROAT HOSPITAL, 231 West Washington Street

Ear, Nose and Throat

9:00-11:00 A.M. Nasal Plastics — Oscar Becker.

11:00-1:00 P.M. Nasal Pharyngeal Fibroma — Ira J. Tresley.

Eye Clinic

9:00-11:00 A.M. Orthoptic Training — Oscar B. Nugent and staff.

11:00-1:00 P.M. Orthoptic Department — Oscar B. Nugent and staff.

ST. LUKE'S HOSPITAL, 1431 Michigan Avenue

8:00 to 11:00 A.M. Bronchoscopic Clinic — Paul Holinger, Albert H. Andrews, Jr.

Original Articles

ORGANIZATION AND FUNCTION OF TUMOR CLINICS IN VOLUNTARY HOSPITALS

H. PRATHER SAUNDERS, M.D.

CHICAGO

It is very important that we talk to pathologists about the organization of a tumor clinic in the private hospital, because certainly in our case the pathologist is the backbone of the tumor clinic. It is very logically so for many reasons. In the first place, he knows more about tumors than most of us; in the second place, he is in a position to see all the tumors that have been removed, and it is certainly logical that he should be given an opportunity to see them before they are removed. The tumor clinic in the private hospital is something that is coming and we might as well get on the bandwagon and be some of the earlier ones to organize these tumor clinics, because as it has happened in many other instances the physicians are going to be more or less forced to do so whether they want to or not. The treatment of tumors is becoming such a complicated matter that there are very few individuals who know everything about it, and in order to overcome that difficulty the simplest thing is to have a tumor clinic well organized and give your patients and yourself the benefit of group observation.

There have been many speeches made and many articles written about the difficulty and impossibilities of organizing a tumor clinic in the private hospital dealing with private patients. It has been said that it is impossible. We have found that it is not only possible but highly practical and certainly very advantageous. The first thing in order to organize a clinic in a private hospital is to get the cooperation and confidence of your staff; then one must have absolute confidence in the group of men who are seeing those patients. We have been getting around that largely by making our staff feel that the entire staff of the hospital is part of the tumor clinic, and we do that by telling them repeatedly at staff meetings that every member of the staff is a member of the tumor clinic, and when he is bringing a patient he does not have

to tell the patient he is taking her over to see some one who knows more about it than he does. He can tell her, "I am a member of a tumor clinic."

We have a small group running the tumor clinic and we have definite, stated meetings once a week. Every member of the staff and every man who comes to the hospital knows he can bring his patient in for examination by the group and get the benefit of the observation of the group without any added expense to his patient except for whatever laboratory procedures are recommended. In the small group that runs the clinic it is very essential that the pathologist be one of the important members. It is also important that the radiologist be a member. In addition, it is a requisite that you have some other men who are sufficiently interested to devote time to it, whether they are gynecologists, internists or dermatologists, but they must have sufficient interest in the work to devote time to it. Then we tell our physicians that they are privileged to request any other member of the staff present to attend the meeting. They are requested whenever they are going to bring a patient before the group to tell our secretary who handles our records that they wish a dermatologist, urologist, surgeon or whoever they wish to attend.

The patient is brought in at a stated time and is prepared for examination by the attendant. Our secretary takes the history from the attending man and the patient together. That becomes part of our record. Then we examine the patient, usually designating one or two men to do the actual examining in the presence of the rest of us. We make this examination before the group and then the patient retires to an adjoining room and the attending men talk over the case. Suggestions are made to perfect the diagnosis and we try to outline a method of handling that particular case. That in substance is the way that the tumor clinic can operate in a private hospital. If you have the confidence of your attending men and make them feel they are part of your group, you will have no difficulty in getting them to bring in patients.

We started out several years ago and as happens in many hospitals a few of the fellows thought we were trying to grab off the cases. We have gotten around that by telling them we have a roentgenologist and a pathologist who are

not in private practice, and that they cannot object to letting them see the patient before treatment is started. Gradually we have overcome that objection and now we have no difficulty in getting patients in and having them examined. The doctors are not introduced to the patient by name, but simply as members of the tumor group who are making a study of such cases. We examine the patient and then go over the record with the physician.

I stated that the tumor clinic is something that is coming. It is coming and it is bound to come because it has so many advantages. Anything that has as many advantages as a tumor clinic is bound to grow. The tumor clinic is certainly advantageous to the patient and we have put ours over by selling these advantages to the staff. We have repeatedly told the staff of these advantages to themselves, saying, "if you sell your patient on these advantages they are going to cooperate with you." The advantages to the patient are the protection of group consultation; in other words, a patient with a carcinoma in the lower bowel is much better off to be seen by a surgeon and a roentgenologist than by either one alone. If the surgeon sees the patient he may see him only from the viewpoint of the surgeon, and may attempt to treat surgically a case which is not a surgical case. Some of the tumors are so fixed and have progressed so far that they are not removable and would do better just by roentgen therapy. If only the roentgenologist sees the case he may see it only from his angle. It is too bad to treat a patient who has a removable condition with prolonged radium or x-ray therapy when the tumor is sufficiently early that it can be removed. So the patient has the advantage of the opinions of a group of men looking at the case from different standpoints, so it is pooled opinion. There are many things coming out in a pooled opinion that the individual might not think of. Though the physician with a private patient is naturally a little bit suspicious of his fellow physicians and may think he is being asked to sacrifice something, we have convinced these men that we are doing them a favor and that we can help them keep the patient in their hands. We can do that in many ways. I had a patient once whom I brought into this group. When we got through and made our recommendations as to what should be done she said, "I

think I will go to a clinic." Her husband who had been listening to our opinions said, "what more can a clinic do for you than you had here? You had the opinion of a pathologist, a roentgenologist and a surgeon. They are competent men." She did not go any further. If in my own office she had told me she was going to a clinic, what could I have answered? We are convincing our men that we are helping them to hold their patients and keeping them under their own supervision and treatment.

Another great advantage to physicians is that regardless of whom treats any cancer case the result is not always satisfactory. When the case is going bad the family is going to ask the doctor why he did not do so and so. If he has taken the whole responsibility in his own hands he is going to be criticized. If he has a group opinion, he can say to the family, the patient had a thorough examination by a group of men who are interested in tumor work and I have carried out the treatment in accordance with the recommendations of that group, and the family does not have an answer to such a statement.

An absolute essential to a successful tumor clinic is a secretary who can take down your minutes in shorthand and take care of the follow-up history. I have not yet found a physician who is energetic enough to take these case records himself. If you depend on the physicians they will not be done. Our hospital has very kindly provided us with a secretary and she has an assistant to make appointments for the patients. The Secretary takes down our findings after examination and our recommendations. After treatment has been started she takes care of the follow-up system. She has the happy faculty of being able to get follow-up information out of patients and physicians. Being a private hospital we had at first a little difficulty in getting our follow-up records, but the secretary has handled it successfully. At a specified time the secretary writes a letter to the patient over the physician's signature saying, "It has been months since you were examined in regard to the trouble for which you were seen on day. I would like to have you come to my office for examination." The patient gets that letter from the doctor. The physician at the same time is given a little card with certain questions we want answered. Our records are becoming more and more valuable all the time and they would not

be so without the help of the secretary.

A stated time for meetings is very important. If a physician has a case which he does not want to hold until the regular meeting, he can make a special appointment for a time when we can get three of the men present. So we have something to do with the tumor clinic every weekday in the hospital.

The tumor clinic is certainly a decided advantage to the hospital itself. It is a wonderful educational factor for the staff. We bring up cases before the staff which show our errors as well as our successes. It keeps the men tumor conscious, and it keeps them thinking about their tumor cases. So when a patient comes to them they make a diagnosis. They do not slide over their cases. It makes them do a much higher type of work in the hospital, and we can see an improvement in the tumor cases in the hospital since this work has been going on. It increases the work in the hospital. It increases the number of people coming to the hospital and increases the amount of laboratory work and x-ray, both diagnostic and therapy. It increases the amount of work in the operating room.

So all you have to do to organize a tumor clinic in your hospital is to sell your staff on the advantages to them and to the patients, and sell the hospital on the advantages to the hospital. It is easy enough if you go out and instil confidence in the men by telling them you are helping them to hold their patients.

DISCUSSION

Dr. Roswell T. Pettit, Ottawa: I am able to look at this problem from the standpoint of the radiologist. I live in a small town, Ottawa, and I am extremely grateful to Dr. Saunders for giving me the opportunity of hearing his presentation this morning because when this idea of a tumor clinic was first promulgated by the American College of Surgeons, Dr. Williamson, who is connected with the College as one of their hospital investigators and who formerly was my assistant, thought it was something I should interest myself in. That was ten years ago. I discussed the matter in detail with Dr. Crowell. He felt that the plan was not practical for towns the size of Aurora, Ottawa, La Salle or Joliet at that time.

The stumbling blocks to the inauguration of such a plan are just exactly those that presented themselves to Dr. Saunders and his group in the small private hospital as contrasted to the large hospital. Now then, there are without question, as Dr. Saunders pointed out, very definite advantages to the surgeon,

to the radiologist, to the internist, to the general practitioner in a service such as is rendered by the tumor group; that is the opportunity for consultation. There are advantages also to the patient. How to secure the confidence of our colleagues, whether they be surgeons or physicians or what not, so they will feel that there is no danger of losing a patient who is brought before such a group is the principal hurdle. I think they have worked out a plan at Ravenswood Hospital of bringing about such consultation to the advantage of the physician and to the advantage of the patients that is being appreciated by the physicians on their staff and by their patients.

There is not much question about the problem of the pathologist. He is in a large measure not on a fee basis. Some radiologists — I imagine the great majority — are not on a fee basis but rather on a salary basis, paid at least in part by the hospital. I myself am in the private practice of radiology and I am on the same basis as an internist or surgeon. I expect to receive my pay for services from the patient direct.

Let us grant, and I think there is no argument about it that such group consultation is valuable and that it does not need to limit itself to surgeons, radiologists and pathologists. Many men in general practice have some particular interest, such as urology, gynecology or dermatology. I think every man in a general hospital has something that he is particularly interested in, so he has something to contribute to such a group consultation.

One of the great advantages, as has been pointed out, is in arranging some definite plan of procedure. As Dr. MacDonald pointed out, it gives a wonderful opportunity for dividing responsibility in failures as well as giving credit for successes. The follow-up, of course, needs no argument. How in the world are we going to find out anything about cancer or any other disease if we do not follow-up our patients? I was very much interested a number of years ago in tracing 100 patients with carcinoma of the breast that had been operated on by more than twenty-five different men who referred patients to me for postoperative x-ray therapy, located in the north central part of Illinois. I found that our five year survivals were just as good as the Mayo Clinic or the Crile Clinic. We could not possibly have done that without following them up.

It happens that I am a member of the Cancer Committee of the State Society. This Committee consists of Dr. Moore, Dr. Wolfer, Dr. Crowell, Dr. Simonds, Miss McArthur and myself. Through our efforts, and those of the Woman's Field Army certain people in the City Club in Chicago interested themselves in presenting a resolution before the legislature last year and we now have money appropriated for cancer control in the Department of Health. There is an advisory board to that division of cancer control. The members of this board are Drs. D. J. Davis, J. S. Templeton, President-Elect of the Illinois State Medical Society, Dr. W. M. Cooley of Peoria, and myself. We feel now we have a perfectly splendid

opportunity in the state of Illinois to work out a program for cancer control which will be of benefit to the profession and the public. A cordial relationship exists between these two agencies, the State Society and this new division of cancer control. Dr. Brokaw, formerly health officer at Jacksonville and for five years managing director of the American Society for the Control of Cancer, is now in charge of this new division of cancer control.

One thing we feel is important and that is that the development of professional education is just as important as lay education. Group clinics on cancer can be made a potent educational agency.

One thing more, our State Cancer Committee is looking for those who will interest themselves in the subject of cancer from the standpoint of the roentgenologist, surgeon or internist.

Dr. Raymond V. Brokaw, Chicago: The importance and the advantages of group diagnosis in cancer control as established in tumor clinics has been so well presented by the previous speakers that there is nothing which I can add except my hearty approval. I should like to take this opportunity, however, as Chief of the Division of Cancer Control of the Illinois State Department of Health, to say that I shall consider it a great privilege to work in close cooperation with the Cancer Committee of the Illinois State Medical Society, and all other interested agencies, in the development of a state-wide cancer program on a thoroughly sound and ethical basis.

Dr. Perry J. Melnick, Chicago: This story that Dr. Saunders told us about the development of a tumor clinic in a private hospital is an inspiration, and the excellent discussion that followed certainly brings out clearly that the medical profession is becoming increasingly cancer conscious. I want to add my appeal to those who have just spoken, that active interest on the part of the medical profession and pathologists in these problems may continue. I echo, Dr. Brokaw's statement when I pledge my whole-hearted cooperation to conduct the Cancer Diagnostic service of the State Health Department for the best interests of all concerned.

Dr. Samuel A. Levinson, Chicago: The University of Illinois is interested in the study of cancer as most of the hospitals and universities are. I have nothing to add to the discussion that has already been given.

Dr. H. P. Saunders, Chicago: (closing): In our hospital we still encourage the physician to take his patients to whomsoever he wishes for treatment. We do not treat the patient ourselves. In fact, we who are specialists get more cases than ever before because we are now making these men tumor conscious. I know all our specialists at the hospital are seeing more cases than ever before.

I want to thank all the gentlemen who participated in this enlightening discussion. Our hospital has a little scientific exhibit that may explain some of the points. We were asked so many questions at the convention in Rockford last year that we got together and made up a little exhibit.

PUBLIC HEALTH ASPECTS OF POLIOMYELITIS IN ILLINOIS

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(Editor's Note: This is the first of a series of four articles on poliomyelitis that will be published monthly in the Illinois Medical Journal.)

Recognizable poliomyelitis is extremely spotty in occurrence even in a community where there are several cases. As an example of what is meant by "spotty" occurrence, it may be pointed out that only one case in a family is the usual finding, although of course not the absolute rule. It may also be pointed out that cases occur in patients who appear to have had absolutely no contact, either directly or indirectly, with any other known case.

Formerly it was thought that the disease was spread by contact with infected secretions of the nose and throat, but recently the finding of the virus in fecal matter and even in raw sewage has changed the conception that the nose and throat were the only portals of entry into the body. This new knowledge coupled with the fact that the virus can remain alive for long periods outside the body, focuses attention on the likelihood of spread by contamination of water, milk and other foods with minute amounts of fecal matter. Formerly it was felt that the disease was transmitted chiefly by direct contact with active cases or perhaps with healthy carriers; but now it is felt that the carrier is perhaps the most potent means of transmission, as it is impossible to recognize him, whereas the active case is taken completely out of circulation. Formerly insects were suspected of being a possible source of poliomyelitis, due to the seasonable character of the disease; and in the light of some recent investigations, the possibility of insect transmission is again receiving attention. However, even after careful consideration of all the available data, it cannot be said with any assurance by what route the disease is spread or transmitted. More research is needed, as may be evidenced by the ever increasing number of investigators studying the disease.

Since about 20% of all cases result in a crippling defect of greater or lesser severity, it is not surprising for anyone to ask what is being done in Illinois, especially by the personnel of

the State Department of Public Health, towards the control of poliomyelitis.

The Illinois Department of Public Health believes that a small expenditure of funds for the medical treatment of patients during the acute illness may, by preventing permanent paralysis, save large subsequent expenditures for the care of crippled individuals. The Department has therefore set up special machinery to aid the practicing physician in the prevention of crippling among his poliomyelitis patients. An important feature of treatment, the Department believes, is the use of convalescent serum. In preparing and making available this serum the Department works in conjunction with the Samuel Deutsch Serum Center of the Michael Reese Hospital in Chicago. The Governor of Illinois has appointed an unpaid committee of physicians from the entire State to act in an advisory capacity to the State Department of Public Health. The Department's resulting program for the control of infantile paralysis is four-fold, as follows:

(1) *Convalescent serum collection, preparation and distribution.* This phase of the work has been placed entirely in the hands of the Samuel Deutsch Serum Center in Chicago. Lists of all reported cases in the State, giving the name, age, and address, are maintained at the Serum Center. In the spring of every year serum-collecting clinics are conducted throughout the State, each clinic bringing the convalescents from within a fifty mile radius to a central hospital where blood is removed. All the work in drawing the blood and conducting the clinic is supervised by the medical staff of the Serum Center. The blood is brought to the Center, and all processing of the serum is carried out by trained personnel.

When the serum has been bottled, it is shipped in 300 cc. amounts to thirty different serum stations throughout the State. This makes it possible for serum to be obtained for treatment anywhere in the State within a relatively short time. Serum is always placed with the 21 District Health Superintendents of the State Department of Public Health, as well as with the full-time city health departments in the State. These act as serum stations. The Samuel Deutsch Serum Center itself is the official serum station for Cook County and Chicago.

(2) *Diagnostic Service.* Since Poliomyelitis is not seen often by the average general

practitioner, and since it is a disease which requires special procedures such as lumbar punctures, spinal fluid examinations and convalescent serum administration, the State Department of Public Health has made a diagnostic service available to the general physician. The diagnosticians available for assistance to doctors are the District Health Superintendents (full-time public health officers in the employ of the State Department of Public Health, who have received special training in diagnosis and treatment of acute poliomyelitis), and a corps of pediatricians and neurologists, who have been appointed as special consultants available through the District Superintendents for this work. The latter are paid by the Department on a per call basis. When poliomyelitis incidence is light, the cases are seen primarily by the District Health Superintendents. The additional group of special diagnosticians is available for epidemic periods.

When a physician suspects a case of poliomyelitis in his practice, he may call the District Health Superintendent in his vicinity. If there is a full-time city health department, the call should go to the Health Commissioner. The health officer will respond to the call himself or will send a member of the special diagnostic staff. If necessary, a lumbar puncture and spinal fluid examination is performed. If a diagnosis of poliomyelitis is made, and serum therapy is indicated, the appropriate dosage may then be promptly administered. Follow-up visits are made to note the progress and to supply more serum if it is indicated.

(3) *Free Diagnostic and Serum Service.* Funds for purchasing blood, for equipment and for payment for special diagnosticians are supplied by the State Department of Public Health. The Samuel Deutsch Serum Center contributes its staff and facilities for collection and preparation of serum and for diagnostic work in the Chicago area. This makes it possible to supply serum, diagnostic service and care without charge to any patient in the State of Illinois. Payment to private physicians is borne by the patient, as in the past. It is obvious that since there is no charge for serum, any patient will receive an adequate amount as soon as the diagnosis has been definitely established. However, because serum is costly to the State and the source of supply is naturally limited, the material must be used judiciously. Serum will be released only

when a member of the staff of the State Department of Public Health has seen the patient, and all measures have been taken to establish a diagnosis. This requirement is essential to the conservation of the supply, as it limits the use of serum to definite cases of poliomyelitis.

For the coming year the Samuel Deutsch Serum Center will prepare a large quantity of so-called adult immune serum, obtained from normal human adults, preferably city-bred. It has been found that normal serum of this type has a fair degree of titer against poliomyelitis. By adding this material to the supply of convalescent serum, it is felt that a greater opportunity will be created for the unfailing treatment of every case that comes to the attention of the Department. The past year's experience showed that cases may occur faster than convalescent serum can be obtained. It is to obviate a future recurrence of this difficulty that the large quantity of adult immune serum to be used in conjunction with the so-called poliomyelitis convalescent serum, is being prepared.

Several Drinker respirators are owned by the Department of Public Welfare and are placed in the State Hospitals at Alton, Anna, Dixon, Elgin, Jacksonville, Kankakee and Peoria. In addition there are many other Drinker respirators in various private and city hospitals throughout the State. The District Health Superintendent in each district is acquainted with all particulars regarding the availability of respirators in his and nearby territory.

(4) *After Care.* The services of the State Department of Public Health are restricted to diagnosis and care of the patients during the acute state. Subsequent convalescent care is assumed by the nurses and doctors of the local community. The Division for Handicapped Children of the Department of Public Welfare offers free medical consultation service in the clinic, and orthopedic (physical therapy) nursing consultation service to a patient in the home. Hospital care also is provided by this division for needy patients.

In closing, it may be well to re-emphasize that poliomyelitis is a communicable disease, caused by a virus, and that a single attack usually confers lifetime immunity. More research is needed to uncover the facts which will make prevention and control possible. Substantial progress in research has already been made, how-

ever, and it appears that students of poliomyelitis are on the threshold of discoveries which will be useful in controlling its prevalence. Last year, for instance, it was announced that cotton rats and white mice can be used successfully in experimental studies. This may open the way for more rapid progress in the development of a suitable vaccine and in the acquisition of more exact knowledge on the behavior of the virus.

Infantile Paralysis — Physician's Manual, S. O. Levinson, M. D., and Philip Lewin, M. D., issued by the Illinois Department of Public Health.

PARALYTIC ACCIDENTS DUE TO RABIES VACCINE

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Since the origination of vaccination against rabies by Pasteur in 1885 it has been recognized that this method and various modifications occasionally cause secondary paralytic syndromes. It is our purpose to report such a case and call attention to the unfavorable neurological reactions which antirabic treatment might cause. It must be emphasized that the rarity of these accidents is far outweighed by the value of antirabic vaccination. No one should withhold immunization against rabies when it is indicated. In general these indications are a bite by a rabid animal or an animal whose freedom from rabies cannot be absolutely ascertained, or the saliva of such animals coming in contact with the broken skin or unbroken mucous membranes.

Remlinger¹ has taken a special interest in the complications of rabies prophylaxis. His papers represent a statistical analysis and review of the reports from Pasteur Institutes throughout the world up to 1927. At this time he collected 329 cases of paralytic accidents occurring in 1,164,264 inoculations (0.028%). From 1927 to 1938 McKendrick² reported 139 cases in 755,891 treatments (0.017%).

The original Pasteur vaccine was emulsified cord of rabbits which had been inoculated for a certain length of time with rabies virus. The virus used was called the fixed virus to distinguish it from the street virus or the virus as found in the ordinary rabid animals. This fixed virus has an incubation period of about seven days, whereas the street virus has a longer pe-

riod of about 28 days. These cords were dried for various lengths of time. The drying was assumed to attenuate the virus, but in reality probably kills varying amounts of the virus in proportion to the amount of dessication. Succeeding doses were graduated using cords which had been progressively less dessicated. Thus, the material used toward the end of the treatment contained appreciable amounts of living fixed virus. Numerous modifications of these methods have been advocated and used. These vaccines may be divided into two main classes: (1) Those containing living virus, (2) Those containing killed, or at least "avirulent", virus.

The effect of these various vaccines on the incidence of paralytic accidents is shown in the accompanying tables.

TABLE 1

Method	No. of Treatments	No. of Accidents	Per Cent. Incidence	Classification	Deaths
Dried Cords	114,214	31	0.027	Living	3
Dilution	62,837	24	0.038	Living	17
Killed Phenol	353,732	35	0.010	Killed	11
Live Phenol	3,464	0		Living	
Fermi	7,319	3	0.027	Killed	2
Heated	93,145	8	0.009	Status uncertain	2
Killed Ether	63,444	8	0.011	Killed	3
Mixed a.	49,656	26	0.052	Probably living	3
b.	2,671	1	0.037	Probably living	0

Smith³ reports that using a living fixed virus from rabbit brain, ground with saline and sent out fresh daily, gave no accidents in 13,829 cases. Park and Williams⁴ report four accidents, but no deaths, in 12,768 cases using Semple vaccine.

Table 1 was compiled from reports of the various Pasteur Institutes from 1927 to 1938 and included no reports from the United States. McCoy⁵ collected from data furnished by leading producers of the vaccines in the U.S.A. the following:

TABLE 2

Method	No. of Treatments	No. of Accidents	Per Cent. Incidence	Classification	Deaths
Semple and Similar modifications	17,645	6	0.034	Killed	4
Frozen and Dessicated Virus	4,148	2	0.048	Living	0
Hoyges	2,593	0		Living	
Pasteur	1,077	0		Living	

Considering the etiology and pathogenesis of these accidents, many theories⁵ have been advanced. By far the most likely idea is that the paralysis is due to the inoculation of a foreign protein. Practically every vaccine, serum, or other biological has at some time or other caused

paralytic symptoms similar to those following rabies vaccine.^{6,7,8} As is well known with other foreign protein reactions a special susceptibility on the part of the person affected must exist. Many cases, as in the present one, are known in which only one person of a group treated with the same vaccine has developed paralytic manifestations.

Another theory postulates that the accidents are a modified or paralytic rabies which is due to the street virus, but which the vaccine has modified. There are numerous reasons why this is wrong. In the fatal cases the pathological features have not resembled rabies; thus, no Negri bodies have been demonstrated. (Investigators have not agreed on the constancy of other pathological findings.⁹) Fatal accidents have occurred in treated patients who have been bitten by animals proved free of rabies, or whose association with rabid creatures has been too minimal to expect infection. It has never been shown that the brain substance from fatal cases contained a virus causing rabies when inoculated into susceptible animals. The incubation period of rabies is much greater than the time interval between treatment and cases of paralytic accidents.

It has been suggested that the fixed virus contained in the vaccines itself might be the responsible agent. It is evident that the foregoing tables indicate that more accidents tend to follow the use of living than the killed vaccines. Again the fact that such a virus has not been demonstrable in those dying from the untoward effects of rabies vaccine weighs heavily against this idea. Another factor which tends to make this untenable is that fatal accidents have followed the use of the killed vaccines (see tables), although it has been questioned whether the phenolized and other "killed vaccines" are entirely free of living virus.¹⁰ The above evidence seems to exonerate the living fixed virus. It might be said in passing that fixed virus infection induced intentionally in animals does not give rise to Negri bodies;¹¹ hence, their absence does not weigh against this idea, as it does against the street rabies theory.

It is possible that other viruses known to exist as parasitic or inapparent viruses in the neural tissue of apparently normal rabbits¹² may exist in these vaccines. Although non-pathogenic to rabbits, they may not be so to man, because

pathologically and clinically similar paralytic syndromes occur spontaneously¹³ and following other vaccines and biologicals would seem to exonerate a living virus as the cause.

A striking fact is that children account for a small number of the accidents¹ although about 50 per cent. of all treatments are given to the younger group. These paralyzes occur not alone in man but dogs and other animals given antirabic treatment. The small number of cases reported in the American literature may be because the Semple method is most prevalently used in the United States. Other vaccines used in America are those prepared by the Cummings method (killed or avirulent) and other procedures which kill the virus.

The symptomatology of these paralyzes has been customarily divided into three types. They may all have such premonitory signs as vomiting, lumbar pains, chilliness, fever, and pain, numbness or tingling in a muscle or muscle group preceding paralysis.

One type resembles a Landry's paralysis, presenting a condition which one would expect with ascending ablation of cord function namely; paraplegia, urinary and rectal retention, pains in extremities and girdle pains. Later, pains in upper limbs which in turn become completely paralyzed. The symptoms may stop here or go on to bulbar paralysis and subsequent impairment in breathing, deglutition and speech. The paralysis is of the lower motor neuron type with absent reflexes and flaccidity of the muscles. The mortality of this type is stated to be 30 per cent. Those not fatal usually recover completely in a few days to several weeks with varying residues of weakness. Another type resembles a dorsolumbar myelitis. This is a milder form presenting gradual weakening of lower limb muscles to complete paralysis with absent reflexes. A marked diminution to complete loss of all sensory modalities may occur. Bladder and rectal paralysis is usually present. Pains and paresthesias may be present in the upper limbs with occasional weakness or paralysis. Recovery is complete in a few weeks. Mortality in this group is about six per cent. The third type is that presenting the usual symptoms of a neuritis of one or more peripheral nerves. Following rabies vaccine the facial nerve seems to be especially susceptible. The case being pre-

sented is the only case of the typical multiple neuritic type found in the literature.

Remlinger¹ gives the distribution of 243 cases as follows:

Severe paraplegia with bladder and rectal symptoms	68
Landry's ascending paralysis	39
Paresis of lower limbs with bladder retention	33
Unilateral paralysis of facial nerve	31
Paresis of lower limbs without bladder retention	21
Paralysis of facial nerve, type not stated	22
Bilateral facial nerve paralysis	5
Paralysis of facial nerve and oculomotor nerves	4
Simple paresis of the bladder	9
Miscellaneous neurotic types	11

Most of the cases occur between ten days after treatment is started and ten days after it is completed.

Various observers are not in agreement as to the pathological changes found. Getzwa et al¹³ found similarity between two fatal paralytic accidents and a spontaneous case of Landry's ascending paralysis. Bassoe and Grinker¹⁴ point out the similarity of the changes in a paralytic accident with those of a verified case of rabies. Practically all reports agree that no Negri bodies are found in fatal accidents and that no virus is present which reproduces the disorder in various animals, principally rabbits, which have been inoculated with nervous tissue from fatal cases. All observers agree that the anterior horn cells and sensory ganglion cells show cytoplasmic and nuclear changes, engorgement of the small vessels of the cord, brain and edema of the glia. There are no typical spinal fluid findings. Disagreement exists as to degenerative changes in the myelin or axon cylinders and as to whether there is a focal increase of neuroglia with perivascular and pericellular aggregations.

Pasteur Institutes state that overexertion during the treatment seems to be a precipitating factor in the development of these paralyzes. For this reason they recommend that patients should remain at rest as much as possible during antirabic treatment.

CONCLUSIONS

In the above case, we have a history of pneumonia and acute tonsillitis, one and one-half years preceding the onset of his first attack of abdominal pain.

In my opinion his cholecystitis and cholelithiasis were the direct result of his attack of pneumonia plus a familial predisposition, although one cannot entirely rule out his other infectious diseases as being causative agents.

Treatment in most instances would depend on circumstances. In the first two types the

bladder paralysis demands special consideration, using the usual urologic procedures to prevent infection, with symptomatic treatment of the other manifestations as they arise. The use of mechanical respirators in the Landry type should help reduce its 30 per cent. mortality. Paralyzed muscles should be treated as in other paralyzes with immobilization in the position of muscular neutrality. After tenderness has disappeared hydrotherapy in the form of tub or pool exercise would seem rational. In the neuritic types Vitamin B complex might be of value.

Whether antirabic treatment is to be stopped would depend upon the severity of the inflicted wounds. Extensive lacerations about the head or face by a proved rabid animal would justify one in continuing treatment, as these cases are the most liable to cause rabies; even the usual complete treatment has been known to fail in preventing the disease with such wounds. Less extensive wounds elsewhere, especially if through clothing might justify discontinuance, especially if a Landry type of paralysis developed. It is not known whether continued treatment makes these paralyzes any worse once they have appeared. As most cases occur in the latter part of treatment or after it is completed, this usually offers no problem.

CASE REPORT. — Seven members of a family whose dog had just died of rabies were given a course of 14 doses of a phenol killed (Semple) rabies vaccine. Their ages ranged from 2½ years to 30 years. Six days following the last injection and six days before admission a nine year old girl began to walk with a faillike motion of her left leg. This became progressively worse until both legs were similarly affected and walking was very difficult. Two days before admission it was noticed that her hands were exceedingly weak, and such things as piano playing were almost impossible. This patient's previous history was negative except for measles and scarlet fever which had uneventful courses.

Physical examination was negative except for the neurological findings (made by Dr. Harry Paskind) which showed: Symmetrical weakness at ankle joints and steppage gait; symmetrical weakness and clumsiness in the hands.

There was marked weakness in dorsiflexion of feet and toes and of hands and fingers. The little fingers could not be placed in a four or five fingered cone. Muscle strength in the extremities was otherwise negative.

Touch, pain, and vibratory stimuli were normal; except over the hands and feet these agents produced a paresthesia. The hands and feet were hyperesthetic to rubbing. The ankle reflexes were absent; patellar

reflexes were present, moderately brisk, equal on both sides. Biceps reflexes were absent; other arm reflexes were moderately brisk and equal on both sides. Plantar stimulation produced no response. Abdominal reflexes were normal. Results of examination of cranial nerves were negative.

Bladder and rectal control normal.

Temperature, pulse and respiration normal.

Laboratory examination showed normal blood and urine.

Spinal fluid gave negative Pandy and Ross Jones. No growth on culture. Slight blood contamination made cell count useless. Throat cultures negative.

Diagnosis: Multiple neuritis due to rabies inoculation.

Treatment and course: The hands, arms, feet and legs were put up in the position of muscular neutrality using moulded posterior splints. Physiotherapy, including light massage and water baths, was apparently of considerable aid. 320 international units of vitamin B were given daily. Under this program patient made a complete recovery in six weeks.

A case of multiple neuritis due to rabies vaccination has been presented. The subject of paralytic accidents due to antirabic treatment has been presented. The Semple or other killed vaccines seem to be safer from the standpoint of the incidence of accidents following their use. Treatment in cases when they occur has been suggested. Because of these accidents discrimination and close watch of the patient should be used during and after antirabic vaccination. Again it is emphasized that these accidents should not influence withholding antirabic vaccination when this is indicated.

REFERENCES

1. P. Remlinger: Reports to the International Rabies Conference, League of Nations, C. H. 531 (1) April, 1927.
2. A. G. McKendrick: Bulletin of the Health Organization League of Nations, 7: No. 1, 1938.
3. H. M. Smith: Experience with Rabies and Its Preventive Treatment, South. Med. Jour. 25: 876, 1932.
4. G. W. McCoy: Anti-rabic Vaccine Paralysis, Pub. Health Reports 45: 188, 1930.
5. F. Young: Peripheral Nerve Paralysis Following Use of Various Serums, J. Am. Med. Assoc. 98: 1139, 1932.
6. Foster Kennedy: Certain Nerve Complications Following the Use of Therapeutic and Prophylactic Sera, Am. J. Med. Sc. 177: 555, 1929.
7. G. Wilson and S. B. Hadden: Neuritis and Multiple Neuritis Following Serum Therapy, J.A.M.A. 98: 123, 1932.
8. F. C. Hodges: Unfavorable Reactions Due to Antirabic Treatment Am. Jour. Clin. Path. 5: 211, 1935.
9. Hans Zinsser and Stanhope Bayne-Jones: A Textbook Bacteriology, 7th Edition, D. Appleton-Century Co. 1935.
10. W. W. C. Topley and G. S. Wilson: Principles of Bacteriology and Immunity, 2nd. Ed. Wm. Wood and Co. 1936.
11. Year Book of General Medicine 100, 1938.
12. S. Getzowa, G. Stuart and K. S. Krikorian: Pathological Changes Observed in Paralysis of the Landry Type, Jour. of Path. and Bact. 37: 483, 1937.

13. P. Bassoe and R. Grinker: Human Rabies and Rabies Vaccine Encephalomyelitis, Arch. Neurol. and Psychiatry No. 23, 1138, 1930.
14. W. W. Park and A. W. Williams: Pathogenic Microorganisms, 10th Edition, Lea and Febiger, 1933.

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CHOLECYSTITIS AND CHOLELITHIASIS IN CHILDREN

Report of a Case

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Cholecystitis and cholelithiasis in children has always been considered a rare disease. This opinion will have to be revised, judging from the number of cases reported recently in the literature. Due to the fact that almost all of the cases reported were first diagnosed as appendicitis, it seems that the incidence of cholecystitis and cholelithiasis in children should be given due consideration, when confronted with an acute abdomen.

If we keep in mind the possibility of cholecystitis and cholelithiasis existing in young children, believe more cases will be diagnosed and reported.

The symptoms of gall bladder disease in children follow so closely that of acute appendicitis, one must be constantly on guard to make a correct diagnosis.

Every surgeon operating upon a child for acute appendicitis and finding a normal appendix, should immediately investigate the gall bladder. The cases reported in the journals by Montgomery, Albert H.,¹ Brown, Wolf S.,² Carey, J. D.,³ and many others too numerous to mention, bears out this statement.

Potter,⁴ finding ten verified cases of gall bladder disease in his own practice, investigated the literature from 1722 to 1937, and was able to collect 432 cases of gall bladder disease in children under fifteen years of age.

Kellogg⁵ was able to collect 64 cases, and I was able to collect 42 from 1926 to 1940, and as the age incidences are quite similar, we will review the findings. Potter's cases reported in 1928 were summarized as follows:

Fetus	2
Newborn	12
Very Young	9
Infant	19
Child	4
Less than 1 year	14
1 to 5 years	26
5 to 10 years	55
10 to 15 years	85

Kellogg found:

Fetus	1
Newborn	7
Very Young	1
Infant	3
Child	1
Less than 1 year	6
1 to 5 years	7
5 to 10 years	13
10 to 15 years	25

Cases that I was able to collect, are summarized as follows: —

Infant	4	1 to 5 years	7
Very Young	0	5 to 10 years	10
Child	11	10 to 15 years	10
Less than 1 year	1		

In Potter's 228 cases, there were found 62 males, 74 females, and 90 whose sex was not stated. Kellogg's figures are at variance with Potter's as he found 25 were in males, 18 in females, and 21 where the sex was not stated. My series gave 9 males, 11 females, and 19 whose sex was not stated. Other author's sources confirm Potter's findings, — that gall bladder disease is more common in the female child than in the male. Potter also found that cholecystitis was associated with stones in 44 cases, without stones in 59, with jaundice in 30, and not stated in 93. Stones were found in 140 cases, not found in 48, and not stated in 128. Jaundice was present in 64, absent in 34, and not stated in 128. Two cases of primary malignant neoplasm were found. My series collected from the literature, shows stones present in 17, absent in 4, jaundice present in 4, and absent in 6.

Since Potter's publication in 1928, he has been able to collect 204 additional cases, and since this last series is similar to the first, we will not review it at this time.

Etiology. That infection plays the predominant role in gall bladder disease in children, there can be no doubt. Many cases recorded in the literature shows that typhoid fever is a determinate factor as well as scarlet fever, lamblia, influenza, pneumonia, appendicitis, and intestinal parasites.

The assumption of Beal,⁶ that malformation of the biliary passages, contributes to the formation of biliary concretions, should be given consideration as an etiological factor. Melchior's⁷ observation that familial predisposition for the disease occurs, is borne out in the case I am about to report.

Popper, H. L.⁸ and Wolfer⁹ state that the entrance of pancreatic juice in the bile ducts, is

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also an etiological factor in the etiology of cholecystitis.

Symptoms. McClendon, S. J.,⁹ states that jaundice usually appears, either before or during a gall stone attack. This statement will have to be revised, however, as more than half of the cases reported had no jaundice during or after their gall stone attack.

Pain is present in the right upper quadrant of the abdomen or near the umbilicus. In fact, localized pain at the umbilicus should be given serious consideration, as it is the most prominent symptom in the vast number of cases reported. Zelditch,¹⁰ in his study of 34 cases of mild cholecystitis in children, found that the pain was more accurately localized mid-way between the umbilicus and the right costal margin, or at the edge of the ribs between the right mamillary zone and the scaphoid process. Nausea and vomiting, tenderness in the right upper quadrant and in some cases, right rectus muscle rigidity, together with an increase in the number of leukocytes, and icterus index, should make one suspect the presence of cholecystitis or cholelithiasis.

In this report, where there has been a history of recurrent spasmodic abdominal pain, we believe we have been able to demonstrate that cholecystitis and cholelithiasis could not be cast aside as a possibility without adequate study, x-rays, and cholecystography.

X-ray examination and cholecystography should be employed in every case where the site of pain is at, or near the umbilicus, or where the pain is located midway between the costal border and the umbilicus or at the edge of the ribs between the right mamillary zone and the scaphoid process.

Only by this procedure will we be able to demonstrate the presence or absence of cholecystitis or cholelithiasis in young children, where high lying pain, nausea and vomiting, recurrent attacks, make one suspect the possibility of gall-bladder disease.

We believe if such a course is followed out, many more cases will be diagnosed and reported.

BIBLIOGRAPHY

1. Montgomery, Albert H.: Disease of the Gall-bladder in Children, *Am. J. Dis. Child.*, 44:372, 1932.
2. Brown, Wolfe S.: Gallstones in a Child of Nine Years, *The Medical Journal of Australia*, 2:486, 1926.
3. Carey, J. D.: Gallstones in Children, *The Journal of the American Medical Association*, 86:1209, 1926.
4. Potter, Alfred H.: Gall-bladder Disease in Young Subjects, *Surg. Gynec. and Obst.*, 46:795, 1928.
5. Kellogg, E. L.: Gall-bladder Disease in Childhood, *Ann. Surg.* 77:587, 1923.
6. Beals, J. A.: Cholecystitis and Cholelithiasis in Childhood, *South. M. J.* 21:666, 1928.
7. Melchior, E.: Cholelithiasis in Childhood, *Brun's Beitrage zur klin. Chir.*, 150:298, 1930.
8. Popper, H. L. and Wolfer: Significance of Entrance of

Pancreatic Juice in Bile Ducts in Etiology of Cholecystitis (H. L. Popper), *Beite. Z. Klin. Chir.* 164:125, 130, 1936; (Wolfer) *Surgery* 1:928-939, 1937.

9. McClendon, S. J.: Gallstones in Children; a Case Diagnosed by Roentgen Examination, *Am. J. Dis. Child.*, 45:584, 1933.

10. Zelditch, Vurman, Zholkver, and Gendich. Cholecystitis in childhood. *Sovet vrach. gas.*, 104:111, 1935.

11. Shawan, Harold K. and Long, E. C. Gall-bladder Disease in Young Children, *Am. Journ. Surg.* 21: 43-46, 1933.

12. Swing, Ann T. and Bullowa, Jesse G. M., Acute Cholecystitis Complicating Scarlet Fever, *Am. Jour. Dis. of Children*, 55: 521-525, 1938.

13. Hamilton, H. B., Rich, C. O., and Bisgard, J. D., Cholecystitis and Cholelithiasis of Childhood, *J.A.M.A.*, 103, 829-830, 1934.

14. Eckardt, F.: Biliary Calculi in Early Childhood, *Monatsschrift fur Kinderheilkunde*, 58:352, 1933.

15. Velo, G.: Cholecystitis Due to a Calculus in the Cystic Duct in a Fourteen-Year-Old, *Cazz. d. osp.*, 48:154, 1927.

16. Del Valle, D. and Donovan, R. E.: Biliary Lithiasis in Twelve-Year-Old Girls *Rev. Soc. de med. intern.*, Buenos Aires, 3:622, 1927.

17. Hamerton, James R.: Acute Cholecystitis at the Age of Three, *The British Medical Journal*, 1:778, 1935.

DISCUSSION

Dr. John A. Wolfer (Chicago): I am much gratified to have Doctor Tearnan present this subject because it falls in line with a theory that I am interested in. Personally I have seen cholecystitis in children and I am perfectly convinced that cholecystitis in children is not so rare. I believe that a number of syndromes seen in children characterized by abdominal pain, nausea and vomiting that come on rather suddenly and disappear in a short time may be caused by mild attacks of cholecystitis. We have all been impressed with the fact that when we review the story of cholecystitis both etiologically and pathologically we must come to the conclusion that the process is a chronic one which began in early life. It is a process that develops slowly. You cannot make me believe that the condition with the 7 stones so beautifully shown on the slide by Doctor Tearnan all developed in a few weeks or a month. The history indicated that the child had trouble for two years and possibly longer.

There is one point on which I do not agree with Doctor Tearnan: i.e. that all cases of cholecystitis are due to an infection. On December 5, 1930 I presented before the Chicago Surgical Society the results of extensive research work on the effect of pancreatic juice when it comes in contact with the gall-bladder. The theory of pancreatic juice reflux as a cause of cholecystitis was not well received, however some years later Colp, Doubilet and Gerber of New York reported several cases of acute cholecystitis in which all cultures were negative and in which they found pancreatic enzymes in the gallbladder contents. Paine of Norfolk, Virginia has made a similar observation and just two weeks ago before the American Surgical Association, Bisgard of Omaha reported his experiments upon goats. He was able to produce acute gangrenous cholecystitis by obstructing the common duct proximal to the entrance of the pancreatic duct thus allowing pancreatic juice to enter the gall-

bladder. The results of his experiments and his conclusions coincided with my work and theory.

In searching the world literature on anatomic studies of the relationship between the pancreatic and terminal end of the common ducts, I found that in approximately 45 per cent. of cases a common pathway existed between the two ducts. Harms and Dragstedt have proved that the pancreatic secretory pressure is greater than that of the liver, therefore in the presence of a common pathway, in the event of an occlusion at the papilla, pancreatic juice can enter the gallbladder. Experimentally all types of pathologic changes can be produced in the gallbladder when pancreatic juice is introduced, these changes include acute gangrenous to chronic proliferating and regenerative changes. Bisgard's goats developed stones in the gallbladder. It has been proven experimentally that large numbers of pathogenic bacteria can be introduced into the gallbladder and not cause cholecystitis. Typhoid fever has been mentioned as a cause for cholecystitis. I cannot concur in this theory and believe that the finding of typhoid bacilli in the gallbladder is a non essential finding. We see as many cases of cholecystitis now or possibly even more than we saw when typhoid fever was common, yet typhoid fever now is a rare disease. Osler observed only 19 cases of cholecystitis in a series of 1500 cases of typhoid fever and Rolleston and McNee in studying the records of 8500 cases of typhoid fever reported in the literature found cholecystitis as a complication in only 60 cases (0.7 per cent). I do not wish to convey to you that I think all cases of cholecystitis are caused by pancreatic juice reflux but I am convinced both from my experimental work and that of others and clinical observations that this mechanism plays a predominant role.

I think Doctor Tearnan should be complimented for presenting this subject. We have neglected to consider cholecystitis as a possible disease in children because we have been taught to think of it as a disease to be found only in the adult. If we are trained to think of cholecystitis as a possibility in the sick child, I am sure we will see more cases.

Dr. W. W. Williams, Quincy: In this day and age we have a great many things to help us along in our diagnosis. I would like to take just a few minutes to give you a report of what we in the horse and buggy days had to do to make a diagnosis. We did not have the x-ray or anything to work with except our history of the case. I want to report a case of a boy, 10 years old upon whom I operated forty-five or fifty years ago. I think you will find it interesting. You have so many advantages to what we had then.

The first operation in this country for gallbladder disease was performed in 1868. Dr. F. D. Bunts of the Cleveland Clinic, Cleveland, Ohio says, "It is interesting to note in a survey of the Surgeon-General's Index Catalog that the first cholecystotomies for stones in the United States were performed by Dr. John Stough Bobb in 1868, and Marion Sims in 1878." In connection with this historical note it is interesting to know that Halsted had stated that he

performed his first operation for gallstones in 1880 or 1881, adding the remark that at that time only one or two operations for gallstones had been performed in this country. Prior to 1880, we find in the Surgeon-General's catalog two articles advocating procedures, one lithotomy and the other cholecystotomy. I myself, was one of the early pioneers to do this operation as well as appendectomy.

On June 5, 1892 I did a cholecystectomy on a boy 10 years of age. He had been confined to his bed for weeks, suffering with severe pain over the gallbladder tract. The operation was performed ten miles in the country, in a three-room log house, with puncheon floors. The kitchen table was the operating table. There was no trained nurse; the nearest hospital was 127 miles away; mud was eight to twenty inches deep. Dr. C. H. Magee, later of Burlington, Iowa, and Dr. Frank Noel of Unionville, Mo. gave the ether. I made an incision over the right rectus muscle over the greatly distended gallbladder and removed over 1000 stones; stitched the opening into the gallbladder to the peritoneum at the upper end of the incision, put in a drainage tube, closed the incision, and applied a dressing of gauze and cotton, and a bandage. He made an uneventful recovery. Today we have the assistance of cholecystography to aid in proper diagnosis and also in the treatment.

Dr. R. A. Tearnan, Decatur (closing): I am glad to know of a man who many years ago found this type of case where he did not have the present facilities as aids in making a correct diagnosis such as the x-ray, cholecystography, and the clinical laboratory. He has just added one more case to the literature. I feel confident that if all the cases were reported that we would find instead of around 600 that have been actually reported, there would be many times that number.

I was mighty glad to have Dr. Wolfer discuss this paper for the reason that I think he has given us some facts which will necessitate revising our etiologic set-up in gall-bladder disease. I read his article in Surgery and it intrigued me very much. I feel just as he does, that while the text-books give typhoid fever as an etiologic factor, it is becoming a negative factor in this country, and still the number of gall-bladder cases has not decreased. So that infection, as he stated, will have to be more or less put in the background as an etiological factor in gall-bladder disease, in the light of the scientific evidence that has been developed. I would advise everyone who can to read Dr. Wolfer's article because it is an excellent treatise on this subject.

In closing I want to lay stress on these points. First, given a child with repeated attacks of abdominal pain, with nausea and vomiting, elevation of temperature, these attacks lasting two or three days and then disappearing with freedom of symptoms between attacks, except for gastric distress following meals, and then having another attack maybe a year later, or even a few months after, as in the case presented. I think serious consideration should be given to such attacks. The literature is so filled with this one pre-

dominant fact that the pain is localized at or near the umbilicus, it should make us conscious of the fact that the patient may be having an attack of cholecystitis or cholelithiasis. As I said before, you cannot rely on jaundice to make the diagnosis. However, I feel that all children who have attacks of jaundice should be investigated with the x-ray, either with a flat plate with cholecystography or with both.

This one thought of Montgomery's I want to leave with you, "early diagnosis and early treatment is going to save these young patients possible liver damage in adult life."

SELECTION OF CASES FOR SPLENECTOMY

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The spleen is an integral part of the hemopoietic system and usually is removed for some disorder of the blood. Exceptions are rupture of the spleen due to trauma and localized tumors and infections. These are rare but may necessitate splenectomy. Such indications for operation require no discussion.

The spleen has four important functions in relation to the blood:

1. *Disposes of old and abnormal erythrocytes and converts hemoglobin into bilirubin by the reticulo-endothelial cells.* Normally almost a trillion cells are destroyed daily. The spleen plays a major role in their disposal. The spleen also may remove abnormal cells in the circulation and usually enlarges from such excessive activity. This seems to be the explanation for the enlarged spleen almost always seen in the anemia of congenital spherocytosis (congenital hemolytic icterus), in sickle-cell anemia, and in erythroblastic anemia (Cooley's). If the abnormally shaped cells function normally after splenectomy, the removal of the spleen relieves the anemia and all manifestations of the disease. This is true in spherocytosis where the only abnormality is in shape, so the spherocytes function almost as efficiently as normal biconcave disks. Here splenectomy relieves all symptoms. In sickle-cell anemia, however, the red cells have abnormalities other than shape so splenectomy relieves only part of the disease. Under certain conditions the spleen takes on a perverted hemolytic activity. Here also removal of the spleen should be curative.

2. *Acts as a storehouse for red cells.* Normally this function does not lead to hypertrophy of the spleen. In polycythemia vera an abnormally large number of erythrocytes are formed. The spleen enlarges as more of these are stored in it. Splenectomy in such cases is not indicated since the enlargement is only an incident in the disease.

3. *Depresses bone marrow activity under some conditions, thus interfering with the formation of red cells, leukocytes and platelets.* In many diseases of the spleen, usually with enlargement, the bone marrow is depressed. The depression may affect all elements normally formed in the marrow and so cause an anemia, leukopenia and thrombopenia such as is seen characteristically in Banti's syndrome, or single elements as the platelets in essential thrombocytopenia. At times this depressant action of the spleen may be evident without enlargement. Thus in essential thrombocytopenia there is a marked decrease in platelets without splenic enlargement or a significant disturbance in red or white cell formation. Splenectomy must always be considered with a depression of the marrow due to splenic activity provided the disease does not respond to irradiation.

4. *Forms lymphocytes, granulocytes, monocytes and erythrocytes abnormally.* In adult life some lymphocytes and monocytes are formed in the spleen as part of the reticulo-endothelial system. In leukemia the spleen becomes a site for the excessive formation of all types of white cells and, under certain conditions as erythroblastic anemia, of red cells also. The hyperplasia of the spleen, however, is always a part of a general involvement in the widespread hemopoietic system, so only under exceptional circumstances is splenectomy indicated here.

With the exception of rupture of the spleen and essential thrombocytopenia, the spleen is enlarged in all clinical conditions for which splenectomy is indicated so the selection of cases for splenectomy depends on a differential diagnosis of splenomegaly.

An enlarged spleen may be due to localized disease in the organ or to a disturbance in one or more of its systemic relations. The more important causes of enlargement are:

- A. Disturbance in function as a reservoir of red blood cells.
 1. Polycythemia vera.

- B. Increased pressure in portal system.
 - 1. Cirrhosis of liver.
 - 2. Thrombophlebitis of portal vein.
 - 3. Banti's syndrome.
- C. Disturbance of leukopoietic function.
 - 1. Lymphatic leukemia.
 - 2. Myeloid leukemia.
 - 3. Monocytic leukemia.
- D. Increased phagocytosis of abnormal particles from blood stream.
 - 1. Congenital hemolytic icterus.
 - 2. Sickle-cell anemia.
 - 3. Gaucher's disease.
- E. Increased activity as organ as defense against infection as in typhoid fever, malaria, or syphilis.
- F. Localized disease.
 - 1. Tumor, especially lymphosarcoma.
 - 2. Giant-cell lymphoid hyperplasia.
 - 3. Hodgkin's disease.
 - 4. Tuberculosis or syphilis.
 - 5. Cyst, as echinococcus.
 - 6. Abscess.

The enlargement in polycythemia vera has already been discussed. With the characteristic increase in red cell count and blood volume in this disease the spleen usually is enlarged. Splenectomy has no beneficial effect, however, since it is only secondarily involved.

With any increase in pressure in the portal system and resulting venous congestion, the spleen increases in size and, if the congestion is chronic, fibrosis follows. Such a fibrosis always takes place in the spleen with cirrhosis of the liver and thrombophlebitis of the portal or splenic vein. It is most probable that portal congestion is largely responsible for the splenomegaly of Banti's syndrome.¹ This disease is pathologically a chronic fibrosis indistinguishable from that taking place in the spleen with cirrhosis of the liver. The characteristic clinical picture in Banti's disease is splenomegaly with gastric hemorrhage and changes in the blood. Bone marrow activity is inhibited by the diseased spleen causing anemia, leukopenia, and thrombopenia. The gastric veins are always enlarged in any splenomegaly and with the increased venous pressure in Banti's disease, gastric hemorrhage frequently occurs. Splenectomy in this disease is usually indicated on account of the anemia and the occurrence of or liability to gastric hemorrhage from esophageal varices.

Splenectomy is contraindicated in the enlargement of the spleen characteristic of leukemia of all types. The patient is not helped by splenectomy since here again the disease in the spleen is only part of the widespread involvement of the hematopoietic system. To remove the spleen is to remove only a small part of the disease.

The spleen as part of the reticulo-endothelial system readily filters bacteria, foreign particles, or disintegrating erythrocytes from the blood. This property of phagocytosis explains the frequent infarcts found in the spleen in bacteremia, the splenomegaly of Gaucher's disease, and the splenic enlargement characteristic of any condition in which an abnormal number of red cells must be disposed of. In congenital hemolytic icterus the fundamental abnormality is a spherocytosis of the red cells. The spleen filters out² such spherocytes and thus produces an anemia and jaundice. The results of splenectomy in this disease are spectacular since the spherocytes which persist after splenectomy function just as well as normally shaped cells. The patient is clinically well after splenectomy although the fundamental condition, the spherocytosis, is unchanged.

In sickle-cell anemia, which is easily diagnosed by the characteristically shaped red cells, the spleen is enlarged also through excessive phagocytosis. The anemia in this disease, however, seems not only due to the excessive removal of red cells from the blood stream by phagocytosis alone but also to excessive fragmentation of red cells which may continue after splenectomy. In sickle-cell anemia, splenectomy may aid, but does not entirely relieve the symptoms of the disease.³

The large spleen in Gaucher's disease is due to the active phagocytosis of lipid particles which are present in the blood in excessive amounts as a result of a disturbance in lipid metabolism. In this disease the spleen is very large, the anemia usually is not marked and the diagnosis can be definitely established only by finding the characteristic "foam" cells in material obtained by splenic puncture. Here also splenectomy is of no fundamental value except to remove an abdominal tumor which by reason of its size warrants operation.

Only rarely is it necessary to remove a spleen which is enlarged as a result of some general infection such as typhoid, malaria, or syphilis. The indication for removal in such cases would

be formation of an abscess, depression of the bone marrow, or so great an increase in size as to cause mechanical embarrassment. With pyogenic infections a septic infarct can lead to an abscess of the spleen which may necessitate removal. There is no diagnostic clinical picture in such conditions.

The spleen may be the site of a wide variety of localized diseases. A primary tumor or cyst of the spleen is rare and most difficult to diagnose. Tuberculosis or syphilis may be localized in the spleen and produce a thrombopenia, leukopenia, or anemia which is relieved only by splenectomy. A giant-cell lymphoid hyperplasia or Hodgkin's disease are best treated by irradiation. An accurate diagnosis of localized disease of the spleen is seldom made before operation.

The indications for splenectomy may be thus summarized:

- A. Splenectomy advisable
 1. Essential thrombopenia.
 2. Congenital hemolytic icterus.
 3. Banti's disease.
 4. Local disease (primary tumor, cyst, rupture, abscess).
- B. Splenectomy to be considered
 1. Cirrhosis of liver with splenomegaly.
 2. Sickle-cell anemia.
 3. Gaucher's disease.
 4. Local disease, as tuberculosis, if causing depression of the bone marrow.
- C. Splenectomy contraindicated
 1. Polycythemia vera.
 2. Leukemia of all types.
 3. Giant-cell lymphoid hyperplasia.
 4. Hodgkin's disease of the spleen.
 5. Enlargement due to harmless local disease.

If a definite diagnosis of the cause of splenomegaly is possible, it is simple to decide whether splenectomy is advisable. It is not always easy to make an exact diagnosis. The spleen may be quite large and still no definite cause for the enlargement may be found, and the clinical history may be valueless. Chronic malaria or syphilis may produce such an enlargement. However, a cryptic splenomegaly is usually due to leukopenic leukemia, Hodgkin's disease, cirrhosis of the liver, giant-cell lymphoid hyperplasia, or Banti's disease (chronic fibrosing splenitis due to increased portal pressure). If the diagnosis is still doubtful after a careful history, physical

examination, and blood study, the spleen should always be irradiated as an additional therapeutic diagnostic measure. If the enlargement is due to malaria, syphilis, cirrhosis of the liver, or Banti's disease, irradiation does not change the size. If due to Hodgkin's disease, leukemia, or giant-cell lymphoid hyperplasia, the spleen rapidly diminishes in size. Splenectomy is contraindicated in any condition which is relieved by irradiation. The procedure in every splenomegaly then is to make an exact diagnosis if possible. If there is doubt after a diagnostic study, irradiation should be tried before a splenectomy is advised, thus preventing a needless operation for Hodgkin's disease, leukemia, or giant-cell lymphoid hyperplasia. Operation should be advised regularly only in traumatic rupture, chronic essential thrombopenia, congenital hemolytic jaundice, and some local disease for which removal is indicated. Splenectomy is often advisable in Banti's disease.

In an enlarged spleen due to cirrhosis of the liver with gastric hemorrhage, in sickle-cell anemia, in Gaucher's disease with a very large spleen, and in local diseases of the spleen causing depression of the bone marrow, splenectomy should be considered as it may be helpful even if not curative. In most other types of enlargement splenectomy should not be done although irradiation may help greatly.

The results of operation in the three conditions other than localized disease of the spleen for which splenectomy is indicated may be discussed in greater detail.

ESSENTIAL THROMBOPENIA

The characteristic clinical picture in essential thrombopenia is bleeding from mucous membranes and into the skin (petechiae) with a low platelet count, prolonged bleeding time, absence of clot retraction, and a positive tourniquet test. Any anemia here is due to the loss of blood. The bleeding may be from only a single area as the uterus without other manifestations of hemorrhagic disease. The spleen is seldom enlarged.

Essential thrombopenia is not uncommon, is more frequent in young people and is often transient. Various infections and toxic states may produce it. In most acute cases treatment should be palliative. Often with transfusions and a clearing up of infection, or removal of causes for a toxemia, all symptoms disappear, the plate-

let count returns to normal and the disease does not recur. Various drugs may cause petechiae usually without lowering the platelet count. Sedormid is one drug which will depress the platelets and cause the disease. In older people, great caution is necessary to be sure that the thrombopenia and resultant symptoms are not an early manifestation of leukemia for which splenectomy is contraindicated.

If the thrombopenia is primary and the disease is chronic, splenectomy should always be done. In our series splenectomy has been done in seven chronic cases with excellent results in all and with no operative complications. The platelet count has risen in every case after operation. Not infrequently the platelet count again falls, however, without being accompanied by abnormal bleeding.

The question of splenectomy in acute thrombopenic bleeding is difficult to decide. One such patient was operated upon and died a few hours after operation. Since a fatal result seems inevitable with all other therapy, a splenectomy seems the only hope although the operative mortality is very high.

CONGENITAL HEMOLYTIC ICTERUS

The clinical results of splenectomy in congenital hemolytic icterus are brilliant. The characteristic clinical features of this disease are anemia with jaundice and an enlarged spleen. The disease is usually manifest from infancy, although the manifestations may vary greatly from time to time. The essential feature of this disease is a congenital abnormality in shape of the erythrocyte. The red cells are decreased in diameter and increased in thickness so are designated spherocytes. The abnormality is in shape only as the cells function as oxygen carriers just as efficiently as normal biconcave disks. For some reason, however, the spleen filters out cells of such shape so an anemia results. The reason for this activity of the spleen seems to be that every red cell as it becomes old becomes spherical and is then removed from the circulation by the spleen. The spherocyte of congenital hemolytic icterus which has its shape as a congenital abnormality rather than as a stage in the normal life cycle of the red cell is thus treated by the spleen as if it were an old cell to be removed from the blood stream.

The jaundice is due to the rapid destruction of cells and the enlarged spleen to its overactivity. The bone marrow attempts to compensate for the abnormal cell loss and is overactive, also as shown by marrow puncture and by the high reticulocyte count.

The clinical results of splenectomy here are so good because by splenectomy a filter which is taking the spherocyte out of the circulation is removed. Twelve patients in our series have had a splenectomy. In every instance the anemia and jaundice disappeared and the patients were perfectly well. There have been no complications, surgical or otherwise, of any kind.

Patients vary greatly in the degree of spherocytosis and in the severity of the disease. If the abnormality in shape is minor, the anemia, jaundice, and reticulocytosis may be so mild as to almost escape detection. Here splenectomy is not needed. If the spleen is palpable, there is jaundice and a definite anemia, splenectomy should always be done unless there is some other contraindication. The earlier the spleen is removed, the better. Since this disease begins in childhood, the anemia so often interferes with physical development if splenectomy is delayed. The youngest patient in our series was a child two years of age who had had an extreme anemia for over a year and who has been perfectly well since operation.

BANTI'S DISEASE OR CONGESTIVE SPLENOMEGALY

The third condition for which splenectomy is frequently done is Banti's disease. This is not a definite disease but a clinical state characterized by increased pressure in the portal vein. The changes in the spleen and the clinical picture are secondary to this increased pressure. The condition is best designated congestive splenomegaly. There is often an anemia due to a depression of marrow activity by the abnormal condition of the spleen and to frequent bleeding from esophageal varices. There usually is also a low platelet count and a leukopenia. The indications for splenectomy depend upon the degree of marrow depression and the occurrence of hemorrhage. The spleen is always large and hard.

Twenty-one patients in our series have had a splenectomy. The results are summarized in table 1. It is apparent that the results are unsatisfactory, especially in contrast with splenec-

tomy for essential thrombopenia and congenital hemolytic icterus.

TABLE 1
END-RESULTS IN SPLENECTOMY FOR
BANTI'S DISEASE

No.	Age	Hematemesis		Final Result
		Before Splenectomy	After Splenectomy	
1	23	+	—	Died fourth postoperative day of pulmonary embolism
2	21	+	—	Died sixteenth postoperative day of thrombosis and infection
3	43	0	—	Died sixteenth postoperative day of pulmonary embolism
4	68	+	—	Thrombosis after operation. Died suddenly one week after leaving hospital. Pulmonary embolism?
5	22	+	—	Died of pulmonary embolism following delivery seven months after operation
6	53	+	—	Died of pulmonary embolism one week after operation
7	39	0	—	Died sixth postoperative day of pulmonary embolism. Had thrombophlebitis
8	8	+	+	Died five years after splenectomy of gastric hemorrhage
9	19	+	+	Died six years after splenectomy of gastric hemorrhage
10	5	+	+	Died five years after splenectomy of gastric hemorrhage
11	26	+	+	Died seven years after splenectomy of gastric hemorrhage. Bleeding for one year
12	52	+	0	Died cerebral hemorrhage one year after operation
13	35	0	0	Probable pulmonary embolism after operation. Death by suicide ten years later
14	20	+	+	One gastric hemorrhage seven months after splenectomy. Well for seventeen years
15	7	+	+	Severe gastric hemorrhages for eight years after remission of eight years
16	16	+	+	Gastric hemorrhage two years after operation. Well for past year
17	41	0	0	Well seven years after operation. No hemorrhage
18	35	0	0	Well ten years after operation. No hemorrhage
19	9	+	0	Well ten years after operation. No hemorrhage
20	21	0	0	Well ten years after operation. No hemorrhage
21	19	+	0	Well six months after operation. No hemorrhage

Fifteen patients had hematemesis before operation which accentuated the anemia. Six patients died as an immediate result of operation; four died of gastric hemorrhage five, five, six and seven years after splenectomy; one died of pul-

monary embolism following delivery seven months after operation; one died of cerebral hemorrhage one year after splenectomy. Of the remaining patients, six were alive and well one, three, seven, ten, ten, and ten years after operation; one was well for ten years and died by suicide; one was alive sixteen years after operation but continued to have gastric hemorrhages. Of the thirteen patients who survived splenectomy more than a year, nine had suffered from hematemesis before operation. Only two of the nine were relieved of symptoms by operation. Four of the six patients who had not had gastric bleeding before operation recovered entirely; two died of pulmonary embolism in the hospital. Only three of the fifteen patients who had gastric bleeding before operation were entirely relieved.

The frequency of embolic phenomena after splenectomy for Banti's disease has been noted by many observers. Rosenthal emphasized the importance of the platelet count before operation. The platelet count rises after any splenectomy but does not rise any higher after splenectomy for Banti's disease than after operation for congenital hemolytic icterus or essential thrombocytopenia. Rousselot¹ stresses the etiologic importance of portal hypertension, the one condition in common to the group of cases included in the clinical syndrome of Banti's disease. It seems most probable that the reason for the frequency of embolic phenomena after splenectomy for Banti's disease is the characteristic high platelet count and congestion in the portal system. The decreased blood flow and marked rise in platelets provide ideal conditions for intravascular clot formation.

The spleen has been removed in nine miscellaneous blood dyscrasias without improvement. Three patients with lymphoid leukemia and one with myeloid leukemia had a splenectomy. In each instance the clinical diagnosis was incorrect. These patients were operated upon before the use of irradiation as a therapeutic test for a splenomegaly of undetermined origin. In two patients the preoperative diagnosis was Banti's disease as the blood picture did not reveal leukemia; in another there was a well marked hemolytic anemia, with jaundice, reticulocytosis, and normal differential count. The fourth patient was a child with an enlarged liver and spleen, anemia and fever but no blood findings sug-

gesting leukemia. In no case did the splenectomy influence the course of the disease. Two patients had a marked thrombopenia without splenomegaly, abnormal bleeding, anemia and leukopenia. The spleen was removed in each instance with the hope of raising the platelet count sufficiently to favorably influence the bleeding. There was some elevation of the platelet count and temporary improvement but both patients died with the picture of an aplastic anemia. One patient had an immense spleen, a marked hemolytic anemia and syphilis of long standing. Improvement after splenectomy was only temporary and the patient died from anemia. Two other patients with a marked hemolytic anemia had a splenectomy. One showed a spherocytosis which was acquired and due to some undetermined toxemia. The operation caused only a transient improvement. The patient died later of the anemia. Another patient showed no spherocytosis and had hemoglobinemia. Here also operation caused no improvement.

It seems apparent that a spherocytic anemia other than of congenital origin is usually not an indication for splenectomy. If free hemoglobin is present in the blood plasma, it is doubtful if splenectomy will be helpful since a hemoglobinemia indicates the cells are being destroyed by some circulating hemolytic agent and not by the spleen.

TABLE 2
END-RESULTS IN SPLENECTOMY

Disease	Number of cases	Deaths from operation	Final result good in
Traumatic rupture of spleen	2	0	2
Essential thrombopenia	8	1	7
Congenital hemolytic icterus	14	0	14
Banti's disease	21	7	8
Hemolytic anemia other than congenital hemolytic icterus	3	0	0
Sickle-cell anemia	2	0	2
Leukemia	4	0	0
Aplastic anemia	2	0	0
Total	56	8	33

CONCLUSIONS

The functions of the spleen and the causes for splenomegaly have been reviewed.

Splenectomy is seldom indicated in the absence of an enlarged spleen except with traumatic rupture or in essential thrombocytopenia.

Splenectomy is indicated in (1) essential thrombocytopenia if the disease is chronic and

clinically significant and in some acute cases; (2) congenital hemolytic icterus if an anemia is present; and (3) Banti's syndrome if the bone marrow is being depressed or if the portal congestion is causing bleeding.

Splenectomy may be of help in sickle-cell anemia and perhaps in some other cases of hemolytic anemia if the spleen is at fault.

Splenectomy is contraindicated in all types of leukemia, in polycythemia vera and in aplastic anemia.

The results of splenectomy in essential thrombopenia and in congenital hemolytic icterus are brilliant and complications are rare.

The results of splenectomy in Banti's disease are unsatisfactory and complications are common.

REFERENCES

1. Rousselot, L. M.: The role of congestion (portal hypertension) in so-called Banti's syndrome; a clinical and pathologic study of thirty-one cases with late results following splenectomy, *J.A.M.A.* 107: 1788-1793, 1936.
2. Haden, R. L.: Mechanism of increased fragility of erythrocytes in congenital hemolytic jaundice, *Am. J. M. Sc.* 188: 441-449, 1934.
3. Haden, R. L., and Evans, F. D.: Sickle-cell anemia in the white race; Report of two cases benefited by splenectomy, *Arch. Inst. Med.* 60: 133-142, 1937.
4. Rosenthal, N.: Clinical and hematologic studies on Banti's disease. The blood platelet factor with reference to splenectomy, *J.A.M.A.* 84: 1887-1890, 1925.

THE HIGH SPOTS IN BRONCHIECTASIS

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The subject of bronchecitasis both in regards to diagnosis and treatment is very vast and with the limited time allotted we will only touch the high spots. With this review of the subject we may at least refresh our minds as to some of the recent points in the diagnosis and treatment. We realize that this paper will deal with the whole subject from etiology to treatment, but as radiologists it behooves us to learn all that is possible about the clinical evidences.

We might ask the question, "What is a Radiologist?" And the answer must be, "He is one that should be familiarized with the history, clinical and laboratory findings, as well as the physical examination if he expects to be a valuable consultant to his colleagues." The day is past when we are only expected to point to the

diagnosis on an x-ray film. So the more co-operation we receive the more assistance we can give to our fellowmen.

Bronchiectasis or dilatation of the bronchi is often a sequella to other pulmonary or upper respiratory diseases. Rarely is the primary disease due to a congenital malformation of the bronchi or lungs. Associated with this dilatation are inflammatory changes in the mucous membrane producing a thickening or thinning of the bronchial walls. When this condition occurs in the dependent parts of the lungs, there is excessive secretion which tends to accumulate in the dilatation and often becomes fetid.

The most common causes are chronic bronchitis and frequently pneumonia, pneumonococcal, pleurisy, carcinoma, syphilis and inhalation of foreign bodies or septic material. The bacterial flora in a well established case is varied, but there is one organism which has long been recognized as an important causative factor — the *Bacillus Influenza*. This organism will produce inflammatory changes in bronchial mucous membrane in varying degrees of severity and produces softening of the bronchial walls. With the weakening of these walls the bronchi gradually dilate. Often following influenza it is remarkable how quickly bronchiectatic cavities are formed; even in ten to fourteen days after illness small ones may be found. When found following a purulent bronchitis or bronchial pneumonia there is chronic and present fever, distressing cough with a large amount of purulent foul smelling sputum. Some patients suffer for years with almost incessant cough. The inhalation of irritating gases acts nearly the same as influenza.

Thomas W. Walsh and Orin O. Meyers in "Archives of Internal Medicine" in June, 1938, state, that there is a co-existence of bronchiectasis and sinusitis. It was shown by Quinn and Meyers that if iodized oil was injected into the anterior nares of a sleeping individual it could be seen fluoroscopically in the bronchi and pulmonary parenchyma by the following morning. They also reported that 57.9% of thirty-eight cases of bronchiectasis showed co-existent sinusitis. McLaurin expressed the opinion that the association of bi-lateral bronchiectasis and paranasal sinus disease is almost constant. On further study of two hundred seventeen cases of bronchiectasis 66.8% were also found associated

with sinusitis as manifested by the presence of green pus in one or more of the para-nasal sinuses.

Pathology: There are several forms which are generally recognized, namely — congenital, acute, fusiform and chronic. The congenital is occasionally met in new born individuals and may persist to adult life. Here we find the lung structure replaced by cysts and a smaller bronchi containing serous fluid. In the acute or fusiform type there is an acute dilatation of the bronchi resulting from some inflammatory condition.

During the years 1918 and 1919 the epidemic of influenza showed many examples of this form. It developed with surprising rapidity, some times in less than a week. In this form it usually involves the lower lobes and at first sight the lung appears to be honey combed with abscesses but are found to be widely dilated bronchi. When a portion of a lung is permanently airless, that is when alveoli are atrophic from long exerted pressure of a pleuritic exudate. The bronchi may become dilated chiefly by inspiratory pressure since the cushion of the air in the alveoli that acts as a counter pressure is absent. Dilatation is possible only if the pressure of inspiration is greater than that of the exudate. After removal of the exudate which does not permit reopening of the alveoli because they are atrophic, produces a most favorable condition for the development of a bronchiectasis.

Foreign Bodies: These more frequently enter the right bronchus than the left because the right bronchus is shorter, wider, more perpendicular and is the direct prolongation of the trachea, the bifurcation of which lies at the level of the fourth and fifth vertebrae. If the foreign bodies are hard and pointed they may become firmly wedged in the tissue. Depending on the character of the bacterial or chemical contamination attached to this body, inflammation and suppuration may develop. In the bronchi by the extension of the inflammation with purulent production behind this firmly wedged foreign body, a pronounced bronchiectasis develops in a short time. Bronchial calculi have been found as large or larger than a cherry stone, composed of thickened exudate impregnated by lime salts, and are most frequently found in saccular bronchiectasis.

Chronic Form: This form may be limited to one or in both lungs. It is generally associated with fibrosis in one of the lower lobes. When encountered in pneumoconiosis it is commonly bilateral, however, it is not limited only to the lower lobes, but may occur in one or both species. When seen here one should suspect a chronic tuberculosis associated. The more chronic the tuberculosis, the greater the amount of fibrous tissue present, and the more certain is bronchiectasis to occur in the upper lobes. This is ascribed to the fact that tuberculosis begins in these lobes. The pathology of the ascribed disease is a subject of many theories, but the following is a simple one. As a result of chronic inflammation in the bronchial walls slowly atrophies the mucous membrane, the elastic tissue, the muscular tissue and finally the cartilage disappears and are replaced by pyogenic membranes. Inspiratory pressure and traction by surrounding fibrous tissue causing dilatation of the effected bronchi.

The dilatation at first is fusiform, but as it progresses it becomes saccular. While the fusiform occurs most often in the lower lobes, it may be found in the upper, especially following tuberculosis and pneumonia. Some authorities speak of a cylindrical type which they think is quite common. The dilatation in this type tends to increase towards the terminal extremities giving rise to the appearance of the fingers of a glove. We have found rather common a type spoken of as saccular, where the bronchi have become markedly dilated at the point. These sacculations may only involve one side of the wall. They may be numerous or only a few. The cylindrical type occurs more often in the large or medium size tubes instead of the terminal ones.

Pathological changes do occur in bone and soft tissue taking the form of clubbing the fingers and toes. It has often been stated that this clubbing occurs in tuberculosis, but if associated with tuberculosis one can be almost certain that dilatation of the bronchi has taken place.

Symptoms: In the classical type of bronchiectasis the patient coughs up two or three times a day large quantities of extremely fetid sputum. The breath of these patients is offensive, even at some distance. In some cases the amount of sputum is as much as twenty

ounces in twenty-four hours, is of a yellowish color and on standing it separates into three layers. The lower layer is opaque or grayish in color. The middle layer is thin, turbid fluid, and the upper layer is frothy and brownish in character. When the upper bronchi are involved the above described symptoms do not occur, because these bronchi readily drain and do not accumulate and stagnate as in the lower lobes. More uncommonly the sputum is blood streaked or even small hemoptysis. Shortening of the breath is usually present as a result of changes in the lungs or fixation of the diaphragm due to pleural adhesions. Pain is complained of, especially if the pleura is involved, and soon the general health becomes effected, with loss of weight, failing in strength and the patient dies as a result of failing compensation or bronchial pneumonia. Rarely do they die by general sepsis. As to physical signs, there is very little evidence on inspection except the clubbing of fingers and toes. Palpation again reveals nothing distinctive.

Percussion: One may find tympanitic percussion note, but one can not differentiate a cavity from bronchial dilatation. But if one can observe this tympanitic note posteriorly in the region of the angle of the scapulas, it is quite certainly due to bronchial dilatation.

Asculation: If amphoric or cavenous breathing is heard at the scapula angle, it points rather conclusively to dilated bronchi. The Skoda's veiled puff sign occurs at the end of inspiration and sounds as though a puff of air was entering a cavity, situated just beneath the ear. Over this area it is more of a metallic quality.

Diagnosis: There is perhaps no other chest condition which has the marked characteristics and yet commonly overlooked, than bronchiectasis. Tuberculosis in its diagnosis shows that the greater per cent. of cases do not occur in the bases and with the examination of sputum and the other clinical symptoms of tuberculosis, one should be able to differentiate. However if the dilated bronchi occur in the upper lobes near the apices, it is practically impossible to tell whether these signs are the result of a pulmonary cavity or dilatation. In this case x-ray usually indicates the difference. In our opinion x-ray perhaps plays the most important single examination which can differentiate this disease. The x-ray diagnosis of bronchiectasis consists of the

study of the chest, posterior, anteriorly and lateral angles, before and after the injection of an opaque media as lipiodol. In the acute or fusiform type, the bronchi appear as parallel lines four to five millimeters wide, running obliquely from the hilum to the medial half of the diaphragm. If there is no secretion in the bronchi it appears as a black air containing space, between these lines, but when filled they resemble arterial shadows, but have more sharpness of outline, are wider and do not bifurcate until they reach the diaphragm. With an end-on view they appear as rings, but if full show opacities denser and sharper in outline than we see in vessel walls. They may be seen full of secretion or completely empty. When the patient coughs, the appearance is considerably altered, which proves a valuable diagnostic sign. There is always a loss of translucency if there is not consolidation of surrounding lung tissue. The hilum shadows are always increased due to swelling of tracheobronchial glands and hypertrophy of the bronchial walls. Some authorities have a between stage called varicose bronchiectasis when there is a small cavity bulging out from bronchial walls and is only recognized after lipiodol injection. The walls are tortuous, somewhat like varicose veins. In the chronic, advanced, or sacular forms the lung affected may be consolidated and full of small cavities, which appear as clear black rings sometimes arranged as in a rosary bead manner or grape like fashion. The diaphragmatic shadow merges with the shadow of the consolidated lung. The hilum shadows are greatly increased before expectoration, and these cavities appear like finger marks, but when the sputum has been brought up, they stand out sharper and often fluid levels may be visible.

With good films the fusiform and sacular bronchiectasis should be revealed. But radiography after injection of lipiodol should be done in each case. Lipiodol clears up the full extent of the disease, often reveals unsuspected cavities behind the diaphragm and the heart. Where there is a bronchial obstruction due to foreign bodies or tumor, this method will often clear up the origin of the disease. No case of bronchiectasis should be subjected to operation until studied by lipiodol. Active exudative tuberculosis is the only pulmonary lesion which contra indicates its use. Many cases will show marked

improvement after an injection. The examination with lipiodol is either directly through the trachea or by means of the oral cavity. In using the oral cavity method we anesthetize the larynx and pharynx by means of a 5% solution of cocaine by means of an atomizer spray. When this has been thoroughly anesthetized the patient is ready for an injection. The lipiodol is warmed to body temperature and placed in a twenty c.c. syringe with a curved canula. The patient is then set in front of the fluoroscope and tilted slightly in the direction of the lung to be injected. With the patient extending the tongue, it is grasped by means of a sterile towel. The canula is placed posterior to the base of the tongue, the patient is instructed to breathe deeply, steadily, and try to prevent coughing. The oil is then slowly injected into the trachea. This can be seen by means of the fluoroscope whether or not the media is passing into the desired location. Following this posterior-anteriorly and lateral films are taken. The bronchiectatic cavities become filled with resulting observation as to size and location or stenosis of the bronchi. The bronchi behind the heart and below the domes of the diaphragm are clearly seen.

Bronchiectatic cavities appear as different sizes and shapes usually in the lower lobes and often look like a bunch of grapes. This opaque substance may remain for a great period of time — a year or more, which must be considered in the future study of the chest. Many cases when the symptoms and ordinary films suggest bronchiectasis will prove negative if the chest is not studied in different angles.

Treatment: The treatment of bronchiectasis depends largely on the stage and type. Surgical treatment is not as successful in the fusiform as in the sacculated type.

In surgical treatment other than lobectomy, there is a tendency to gradually spread the sacculations. Artificial pneumothorax is beneficial if fibrosis and damage of the lung are not so prominent as to form a rigid wall of tissue which air pressure will not collapse, but combined with phrenic evulsion the results are slightly better. This however should not be done if one thinks lobectomy will later be necessary.

Phrenic evulsion is of value as a preventive of bronchiectasis in a lung area surrounding an abscess. Thoracoplasty is a palliation procedure which should be used only when the whole

lung is involved in a septic process. Lobectomy in skilled hands has a low mortality. Based on the more recent concepts of the action of roentgen radiation on chronic inflammatory bronchial or peri-bronchial lesions, and the mucous secreting bronchial epithelium, large doses of roentgen therapy was successful in thirty reported chronic secreting bronchiectasis. Roentgen therapy has shown result in chronic inflammatory as well as acute processes, and has a scientific basis for its consideration.

The ray acts mainly on the leucocytic infiltration, causing destruction of these hyper-sensitive cells with ensuing phagocytosis and connective tissue proliferation. It has been demonstrated that within certain limits, definite tissue reaction can be produced in the lungs. If it can and has been shown of value in tracheo-bronchitis and pneumonia, why not in bronchiectasis?

In the experience of many noted radiologists, the results are only obtained after a long course of treatment, at least three months, with all the diseased areas cross fixed through anterior, lateral, and posterior fields, with the average of 1200 R Units to each field. During the treatment there was low grade fever, more frequent cough and increased expectoration, but the improvement was only noticed after the latter part of the treatment, when we noticed a decreased cough and foul expectoration. The improvement continued for at least four to six months and was sustained. The study of the chest at this time showed contracture and stenosis of the decreased bronchi throughout the area treated. With no evidence of the pleura, thickening, of pulmonary fibrosis, or mediastinal thickening. Before this type of treatment is instigated a complete study of the chest by physical, laboratory, x-ray and bronchoscopy. I do not believe there are any of us but what would be more willing to accept roentgen therapy on ourselves before we would submit to lobectomy, thoracoplasty, or phrenectomy.

Surgery: If the dilatation of the bronchi is confined to one lower lobe, amputation of this portion may be attempted, in other instances, resection of ribs overlaying the affected area surgery has not been so encouraging.

Drugs: The effort with drugs is to reduce the amount of sputum, facilitate expulsion, and remove foul odor. Those that tend to reduce amounts are: copaiba, sandalwood oil, encalyp-

tus, creosote. Oil of cloves has been recommended both by mouth and hypodermically. Intratracheal injection of menthol, guaiacol, or iodoform in olive oil has some success. Inhalation of medicated vapors is also recommended. A most important method is the postural. The general health should not be overlooked, those who can afford it, should reside in warmer climates.

REFERENCES

1. Watson, S. H. and Kibler, C. S.: Bronchiectasis — New conception of etiology which makes prevention and recovery possible. *S. W. Med.* 21: 428, 1937.
2. Walsh, Thomas W. and Myer, Ovid O.: Co-existence of bronchiectasis and sinusitis. *Arch. Int. Medicine.* 61: 890-897, 1938.
3. Berck, Maurice and Harris, William. New York: Further experience with roentgen therapy in bronchiectasis. *Radiology.* Vol. 32: 693, 1939.
4. Year Book of Radiology. 1937: Waters and Kaplan, Roentgen therapy for bronchiectasis.
5. Year Book of Radiology. 1935: Waters and Kaplan: Bronchiectasis — Diagnosis and prognosis in relation to treatment.
6. Outline of Roentgen Diagnosis. Rigler. Pages 79 and Wessler and L. Jackes, M. D. New York.
8. Nelson Loose Leaf Living Medicine. Vol. 3. 97.

ADEQUATE CONTROL OF THE MENOPAUSE

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Over a period of years the authors have studied the effectiveness of whole ovary extracts and estrone (when the latter became available) in the treatment of the menopausal syndrome, Estrone, in turn, gave way subsequently to estradiol benzoate and finally to estradiol dipropionate which was synthesized by Miescher and Scholz in 1937¹. In an attempt to evaluate, it has been our practice to demonstrate superiority of a hormone or derivative, by substitution of another from time to time, without the patient's knowledge, and to question the patient relative to the relief of symptoms obtained. The patient's subjective response, thus gained, was our criterion for further administration of a given product.

As more potent extracts or chemically pure substances became available, it has been our tendency to increase the dosage. Our trend in this direction was influenced by the encouraging response of our patients to higher potency therapy, although we were quite aware of various investigators' claims for relief of menopausal

symptoms on relatively small doses of estrone, estradiol, or esters of the latter.

The present paper deals with a series of 43 *private* patients on whom complete records have been maintained for a period of four years to four months (which has been considered the shortest possible period for any clinical conclusions). Other records considered but not used in this study have been discarded because of lack of complete follow-up. Further, the group reported upon has been continuously under observation following the administration of estradiol dipropionate which was first used by us in March of 1939.*

A short resume on follicular hormone is probably in order for recapitulation purposes. Estradiol, isolated from follicular fluid, presumably is the true follicular hormone². Estrone (theelin) and estriol (thelol) may represent excretion forms of metabolized estradiol³⁻⁴. A number of observers agree that estradiol is more potent than estrone and that estriol is the least potent per milligram of the three substances. Esterification of estradiol or estrone apparently leads to a more prolonged physiologic effect on intramuscular administration. This latter effect may be due to slower absorption of the compound. Greene and Dorr⁵ have confirmed previous reports⁶ as to the prolonged activity of estradiol dipropionate, and have shown for the first time that this prolongation is also seen in human beings, and that it is clinically more effective per unit of weight than other available chemically pure estrogens, and therefore may be given with more relief and at less frequent intervals.

It has been our custom for the past year and a half to initiate treatment of the menopausal syndrome with one to three injections of 5 mg. of estradiol dipropionate. In the event that the individual fails to respond promptly to such doses at weekly intervals we feel that further estrogenic therapy is useless.

We have found that once the patient understands and appreciates the effect to be realized it is not necessary to suggest continued regular visits for she will return before symptoms recur. When with our initial large doses we obtain a subjective response we attempt to maintain the patient on a 0.2 mg.-1 mg. dosage. In the event

that such dosage at 7-10 day intervals is not sufficient to allay subjective symptoms it is our custom to revert to the high potency for one or two subsequent injections. The reserve (?) thus built up proves adequate for a variable period of time, possibly four to six weeks — although 0.2 mg. dipropionate medication at 7-10 day intervals is still maintained. Several typical case reports follow:

Case No. 8975 — Age 52. Patient first came under treatment in 1938, because of pronounced menopausal symptoms. Injections of 1/3 mg. estradiol benzoate at bi-weekly intervals for one month sufficed to bring her vasomotor symptoms, etc., under control, and the interval was finally prolonged to 10 days. The latter dosage was apparently insufficient and at the end of three months of such management 5 mg. of dipropionate was administered. Because of complete remission of all menopausal symptoms we were able to place the patient on a monthly dosage of the latter amount. At the end of 5 months the dosage was cut to 1 mg. at 10 day intervals for a period of 2 months with continued relief. At the end of this time the dosage was further cut to 0.2 mg. at 10 day intervals for a period of 2 months; Her symptoms recurred and she was again given the 5 mg. dosage which afforded her complete relief. To the present time 0.2 mg. at 10 days to two week intervals has sufficed to keep her under complete control.

Case No. 8234 — age 42. Patient first complained of symptoms attributable to menopause in July, 1938. An effort was made to stabilize her on weekly injections of 1/3 mg. estradiol benzoate with only partial success. In April, 1939, she was given 5 mg. of estradiol dipropionate and this dosage was repeated at 3 weeks to monthly intervals over a period of 9 months with complete remission of symptoms. 1 mg. dosage for 2 months was then resorted to with likewise complete remission of symptoms. Since December, 1939, 0.2 mg. at 12-14 day intervals have sufficed to keep her symptoms completely under control.

Case No. 9484 — age 40. Patient first appeared for examination in April, 1939, complaining of the usual menopausal symptoms and of headache which was of the migraine type. She was placed on estradiol dipropionate in 5 mg. dosage with relief of all symptoms after 2 injections at an interval of one week. She then returned at intervals of 3-4 weeks for administration of the same dosage until June of this year when the dosage was dropped to 0.2 mg. without the patient's knowledge. Since that time it has been necessary for the patient to return at 7-10 day intervals in order that her symptoms be kept under control.

Case No. 9270 — age 44. Patient was first examined in December, 1937. A diagnosis of involutional arthritis and menopause was made. She was placed on 1/3 mg. estradiol benzoate at weekly to 10 day intervals with improvement in her general conditions,

*Supplied through the courtesy of Ciba Pharmaceutical Products, Inc. and marketed under the trade name Divocyclin.

but not complete relief. In April, 1939, she was placed on 0.5 mg. dosage of estradiol dipropionate at the same interval. In September, 1939, without her knowledge, 1/3 mg. of estradiol benzoate was substituted with a recurrence of all symptoms so severe that it was necessary to resort to dosage of 5 mg. of the dipropionate. Because of complete remission of symptoms she did not return for one month and on that occasion as well as the following month she was given 1 mg. dosage. After the second of these she returned in three weeks and was arbitrarily placed on 0.2 mg. dosage at 10 day intervals. This has sufficed to keep her symptoms under control if resort is made to the 5 mg. dosage, as well, at 2 months intervals.

Suppression of vasomotor phenomena and sense of general well being are results almost invariably reported by patients under adequate management. Apropos of the latter and although not quite in the scope of this paper, it has been the authors' experience that where psychoses have developed this type of therapy fails to induce improvement in the mental status of the individual (3 patients). This is apparently an accurate observation,* although a more intensive and prolonged therapy with 5 mg. doses might yield better results. Further the authors do not believe that in their experience a correlation may be struck between estrogenic therapy and the subsequent development of malignancy, whatever the site.

The authors recognize the existence of menopausal symptoms in patients suffering from thyroid deficiency and have taken care to rationalize the effect that thyroid therapy must have in the management of such complications.

CONCLUSIONS

1. Estradiol dipropionate is the estrogen of choice to date. This has been demonstrated when various other estrogenic substances were administered without the patient's knowledge.
2. High dosage at the time of the first office visits will justify or discredit further estrogenic therapy of the menopause.
3. Much smaller maintenance doses may easily be supplemented, when indicated, by occasional larger doses to obtain adequate remission of symptoms. This suggests definitely that a reserve is set up which may be re-inforced from time to time without fear of complication.

*Dr. Dorr: Personal communication with the authors.

BIBLIOGRAPHY

1. K. Meischer and C. Scholz: *Helv. Chim. Acta* 20: 263, 1937.
2. MacCorquodale, D. W., Thayer, S. A., and Doisy, E. A.; *J. Biol. Chem.* 115: 435, 1936.
3. Pincus, G., and Zahl, P. A.: *J. Gen. Physiol.* 20: 879, 1937.
4. Westerfeld, W. W., and Doisy, E. A.: *Ann. Int. Med.* 11: 267, 1937.
5. Dorr and Greene, *Am. Journ. Obs. & Gyn.* 38: 458-464., 1939.
6. Miescher, Scholz & Tschopp, *Biochemical Journal*, 32: 141-148, 1938.

SEDATION AND HYPNOSIS WITH MINIMAL SIDE REACTIONS

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The findings reported herein concern a drug which induces a mild to moderate degree of sedation and hypnosis with a minimum of unfavorable side reactions. This drug, *a*-monobromisovalerylurea,* was the first used by the writers as a basal sedative for fever therapy patients. It evidenced such uniformly favorable action in these cases that its use was extended to many other conditions where reliable hypnotic as well as sedative effects were desired.

Pharmacologic Background of a-Monobromisovalerylurea. Investigations have shown that *a*-monobromisovalerylurea exhibits distinct advantages over such compounds as the bromides, barbiturates, and similar drugs. The barbituric acid derivatives, for example, have been widely used as sedatives and hypnotics, but in recent years attention is increasingly centered on the rather common occurrence of intoxication following their use. As stated by Weiss,¹ their effects depend primarily upon their action on the brain stem, — the functions of the midbrain being particularly susceptible. Characteristic depression of important vegetative function may follow prolonged use of such drugs. Chronic barbiturism, leading to impairment of the sense of smell and taste, to nausea, vomiting, hallucination, and respiratory depression, is seen with alarming frequency. Indeed, Weiss points out that barbiturism is assuming a more prominent role in medicine today than cocaineism. Consequently a

*This sedative and hypnotic drug, *a*-monobromisovalerylurea, was supplied for this clinical investigation by Amfre Drug Company, Inc. of New York City in 0.3 gm. tablets under the name AMFRIN.

drug which induces desired sedative and hypnosis without disturbing side effects can hardly fail to be of universal medical interest.

Although *a*-monobromisovalerylurea contains bromide, it produces no symptoms of bromide intoxication such as headache, dryness of the mouth, mental disturbances, etc. This advantage is explained by the fact that the bromine is securely linked in the organic molecule and does not become free and ionized as does the bromine in sodium and potassium bromides. The latter drugs are known to accumulate in the blood stream, often at the expense of chlorides which are correspondingly depleted. McConnell² points out that depression of the medulla by the bromides likewise often produces undesirable effects.

As far back as 1907 pharmacological investigation revealed the superiority of *a*-monobromisovalerylurea over other sedatives. Eeckhout³ demonstrated that this bromurated ureide exercised a selective action only upon the cerebrum, with the medulla as well as the spinal cord remaining unaffected. In therapeutic doses, blood pressure and respiration continued normal and vegetative functions were not depressed, — which doubtless accounts for the fact that nausea, vomiting, and such centrally evoked symptoms have never been reported following the use of the drug. Eeckhout also found that, in contrast to other halogenated hypnotics, this drug is devoid of secondary effects on the vasomotor system in general. The absence of undesirable symptoms following extended use of this drug is further explained by the observation of Krieger and Velden⁴ that it is readily metabolized and rapidly eliminated, thereby minimizing cumulative effects even after repeated dosage.

These early observations of Eeckhout and of Krieger and Velden concerning the high safety factor and minimal side reactions of *a*-monobromisovalerylurea were soon confirmed by Sollmann and Hatcher.⁵ These investigators studied a number of commonly used sedatives and hypnotics, finding that the nausea and gastric irritation produced by other compounds did not occur following the use of *a*-monobromisovalerylurea. In addition, their experimental studies showed that its pharmacologic effects did not persist abnormally long. More recently Alvarez⁶ and Wolf⁷ have presented evidence that this ureide can be given in large doses or for long periods of time without occurrence of unpleasant reactions.

Sedative and Hypnotic Efficacy. A noteworthy advantage of *a*-monobromisovalerylurea is its rapid absorption from the alimentary tract,⁴ leading to a rapid, but mild and transient, sedative action or hypnosis. These effects last about three to five hours,^{3, 5, 6, 8} and although the drug is rapid in action, it does not produce undesirable tangible sensations of the oncoming hypnosis.⁷ In view of its dependable hypnotic and sedative effects and its freedom from side reactions, it has been repeatedly advocated as a sedative in nervousness, hysteria, irritability, apprehension, and excitement. Since its use over long periods of time is not attended by unpleasant effects or the danger of cumulative action, it is indicated for the relief of anxiety and mental distress accompanying such conditions as chronic cardiovascular disease and the menopause. Mutch⁹ has recently recommended this drug for patients who exhibit idiosyncrasy to barbiturates or who have become habituated to their use. Alvarez⁶ states that, "It is one of the best drugs I know for calming nervousness during the day." Concerning its hypnotic action which is mild and persists for only three to five hours, he also finds that it does not produce annoying after-effects the following morning. It has also been suggested that this drug will prove useful in the preparation of restless and apprehensive patients for minor operative procedures, as well as to relieve postoperative states of nervous tension.⁸

Clinical Observations. As a basal sedative at the beginning of fever therapy treatments, *a*-monobromisovalerylurea has proved superior to other drugs that have been used by the writers for the same purpose. The average calm patient was given 2 tablets (0.3 gm. each) at the beginning of the treatment and 1 tablet one hour later. For the apprehensive patient 4 tablets were used at the start of each treatment. These dosages proved adequate to induce the desired degree of sedation, and patients required only a single ¼ grain dose of morphine sulphate at the height of the fever curve. Respirations were not depressed by *a*-monobromisovalerylurea as with many of the other sedatives used. This series comprised 37 patients suffering principally from arthritis and rheumatism; a few had syphilis or gonorrheal infections. A total of 169 treatments were given, with no untoward reactions observed. No contraindications to the use of this drug as a basal sedative in fever therapy were found.

In view of the superiority of this drug as a basal sedative in fever therapy patients, it was also used as both a sedative and hypnotic in 49 patients classified as follows:—

Insomnia	18
Hysteria	14
Melancholia	2
Menopausal syndrome	4
Neurosis and Neurasthenia	4
Migraine	4
Tabes Dorsalis	1
Pregnancy	2

Complications for which these patients were also being treated by other measures included anemia, anorexia, hyperemesis gravidarum, hypertension, hypotension, menstrual disorders, obesity, general debility, and postoperative convalescence. None of these conditions nor the therapy employed for their treatment was found to be in any way a contra-indication to the use of *a*-monobromisovalerylurea in the dosages necessary to produce desired results.

For sedative effects $\frac{1}{2}$ to 1 tablet two or three times daily was the average dosage employed; for inducing sleep 1 or 2 tablets before retiring proved effective in most cases, with this dose occasionally being increased to 4 tablets without untoward effects. It was noteworthy of this drug that it produced none of the after-effects upon waking which are commonly experienced with the barbiturates. No cumulative effects were evidenced even in patients who took the drug almost uninterruptedly for periods of two and three months.

The advantages of this sedative and hypnotic are its rapid yet mild action and its absence of untoward side reactions. The extremely nervous patient and those suffering from insomnia were markedly improved, usually within a week or two, by reason of the effectual calming action of sedative doses and the restful type of sleep induced by hypnotic doses.

SUMMARY

[Pharmacological as well as clinical studies have shown *a*-monobromisovalerylurea to be superior to bromides, barbiturates, and drugs of similar type, in that sedative and hypnotic effects are produced without unfavorable side reactions. The drug is rapid but mild in its action, it is quickly metabolized and eliminated, hence does not have cumulative effects even with prolonged administration; it does not affect blood pressure

or respiration, and does not cause gastric irritation, nausea, or vomiting; no after-effects are noted upon waking after hypnotic doses of this drug. Used as a basal sedative for patients treated by fever therapy, the drug proved superior to others because of its minimal side reactions. As a sedative and hypnotic in a wide series of patients its superiority continued to be manifested by the calming action of sedative doses, the restful sleep following hypnotic doses, and the absence of side reactions, after-effects, or cumulative effects even after long periods of use.]

REFERENCES

1. Weiss, — International Clinics 1: 39, 1936; Cecil's "Textbook of Medicine," 5th edition, 1940.
2. McConnell — Cecil's "Textbook of Medicine," 5th edition, 1940.
3. Eeckhout — Arch. Exp. Path. and Pharm. 57: 338, 1907.
4. Krieger and Velden — Deutsch med. Wochschr. 33: 213, 1907.
5. Sollmann and Hatcher — J.A.M.A. 51: 487, 1908.
6. Alvarez — Coll. Papers Mayo Clinic 19: 73, 1927.
7. Wolf — Memphis Med. Jl. 7: 88, 1930.
8. "Accepted Dental Remedies," American Dental Association, 1940.
9. Mutch — Brit. — Med. Jl. 10: 319, 1934.
10. Kimble — Clinical Medicine and Surgery 43: 593, 1936.
11. Kimble et al. — Physical Therapy Review Bul. 15 No. 1, 1935.

ADEQUATE IMMOBILIZATION OF FRACTURES OF THE LEG

W. J. POTTS, M.D.
OAK PARK, ILLINOIS

Posterior molded plaster splints or circular plaster cases are commonly used for fixation of fractures of the leg. Each fails in some measure to accomplish the desired purpose — adequate immobilization. The molded splint alone, often is not strong enough to resist breaking or bending for six weeks and allows angulation to occur. A circular plaster case, sufficiently padded to avoid trouble, becomes loose after the swelling disappears and still looser as atrophy of the leg progresses. Slight motion of the fragments upon each other follows and, I believe, tends toward delayed or non-union. Ready made splints protect but do not immobilize fractures.

No doubt, a combination of the posterior molded splint and the circular case is frequently used. Since a description of the technique of application does not appear in the standard textbooks on fractures, this brief review of a method I have found useful for ten years is submitted.

The types of fracture to which this means of immobilization is applicable are: fractures of the tibia or the tibia and fibula with little or no displacement; replaceable, transverse fractures of both bones which will not override after reduction; compound fractures which after debridement allow for reduction that will maintain itself by means of interlocking fragments.

Technique. The leg is not shaved. A few turns of sheet wadding are wound around the heel and ankle to protect the bony prominences. Measurements of the length and the circumference of the leg are made to insure the extension of the splint from well up on the thigh to an inch beyond the toes and slightly more than half way around the thigh and leg. (Figure 1a.)



Fig. 1a

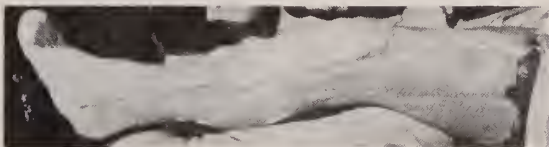


Fig. 1b

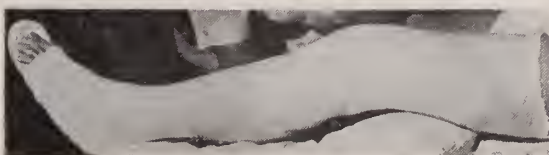


Fig. 1c

The plaster mold, made on a smooth, hard surface, should be ten to twelve layers thick. If too light it will break; if too thick it will not conform to the contour of the leg without wrinkles. The more common error is on the side of too great thickness with consequent wrinkles which cause discomfort and sometimes bleb formations.

The plaster must be fresh and well made. Unless one is working in a large institution where this is always assured, better results will be attained by using commercially prepared plaster bandage sold in sealed tin containers. The splint, made of thoroughly soaked plaster, is quickly applied to the leg and molded smoothly to the skin before setting begins. As rapidly as

possible a few turns of plain, never muslin, gauze are wound around the entire splint to hold it firmly against the skin and to keep it smooth. The extremity is carefully supported with the palms of the hands during the hardening process. Finger dents in the plaster and pressure on the heel must be avoided.

After the plaster had hardened the gauze is cut from top to bottom except for a few turns on the thigh to hold the plaster in place. The edges of the plaster splint are raised a little from the skin on both sides by running the blunt end of a bandage scissors between them and the skin. Unless this is done skin blisters may form along the edge of the plaster as the swelling of the leg crowds itself anteriorly. The splint is now re-wrapped with plain gauze and the patient returned to his room where the leg is placed on pillows with no support under the heel. Sand bags beneath the sides of the pillows will hold the leg firmly and comfortably.

After a few days the position of the fragments is checked roentgenographically if necessary, and the circular case is applied. The gauze is removed. The edges of the plaster splint are bent up slightly more, and about four layers of sheet wadding are laid longitudinally over the anterior surface of the leg and tucked under the open edges of the splint. (Figure 1b.) A few extra pieces of padding are placed about the patella to avoid painful pressure. The circular plaster is laid on from toes to thigh. (Figure 1c.) After the plaster has dried the patient is dismissed to ambulatory care with assurance that the fragments will remain fixed.

FRACTURES WITH OVERRIDING

A further use of the posterior molded splint applied directly to the skin is found in those fractures requiring traction for reduction. For the average man the insertion of a Kirschner wire through the heel for traction is less than half as dangerous and far simpler than the application of a distraction device which requires the insertion of two Steinmann pins through the tibia. One objection to simple traction on a wire through the os calcis is that fractures so treated are not adequately immobilized when the leg is merely supported in a Thomas splint suspended on a Balkan frame. Each time the patient moves himself in bed there is some motion of the fragments upon each other. This motion is obviated by the use of a posterior molded

splint in the following way: the Kirsechner wire is inserted through the heel and adequate traction applied to the leg supported in the usual Thomas splint. After a few days when the fragments have been pulled down into position, the posterior molded plaster splint is applied. Traction is not disturbed and the patient is not hurt if the leg is carefully supported manually while the Thomas splint is depressed out of the way during the application of the plaster. Plain gauze wrapping is used to hold the plaster firmly against the leg. After the plaster has hardened, the Thomas splint is allowed to come back into position to support the leg as before. (Figure 2.) Motion between the fragments is now impossible.

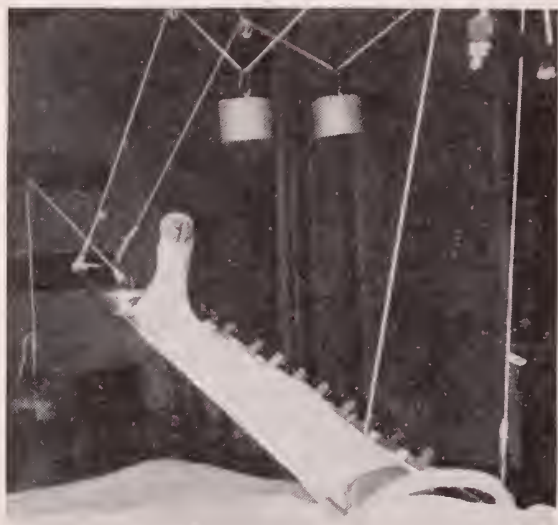


Fig. 2

As soon as healing has progressed sufficiently to allow removal of the traction apparatus, adequate protection of the fracture may still be maintained by leaving on the posterior molded splint and applying a circular cast over it. Medical Arts Building

It is perhaps a tragedy for humanity that the destructive lesions of tuberculosis are not visible as they are in leprosy. The transmissibility of leprosy was recognized in biblical times and isolation of the afflicted was the rule then as it is even now. The old adage which says that "what one cannot see won't hurt" has served to protect the tubercle bacillus but not its host. While the proper attack upon the control of tuberculosis is something over 2000 years late, it finally has obtained a good start and promises to do in a few decades what has required centuries for leprosy.—David W. Heusinkveld, M. D., *Journal of Medicine*, November, 1940.

FACE ERUPTIONS DUE TO NAIL POLISH MAY BE IMPROPERLY DIAGNOSED

Because skin eruptions due to nail polish are more likely to occur about the face than the nail folds or other parts of the hands, many cases may not be properly diagnosed, Lester Hollander, M.D., Pittsburgh, observes in *The Journal of the American Medical Association* for Nov. 16.

He reports 3 cases in which the eyelids and areas of the chin below the lower lip were involved. "This must have occurred by contact," he says, "such as straightening the eyebrows with the lacquered nails and possibly by the habit of playing with the areas on the chin." In one case the left side of the neck was involved, due to the patient's habit of doubling her hands and keeping her nails against her neck during sleep. In no case were there eruptions on the hands.—*Pennsylvania Medical Journal*.

CONSERVING THE PATIENT'S TIME

When a patient visits a busy practitioner, he is usually resigned to a long wait in the waiting room and probably takes pride in the fact that his physician is such a busy man, but the long wait is never a pleasant ordeal. When it is necessary because of the time taken with other patients, no legitimate objection can be made by anyone and rarely is made, but there are times when physicians subject their patients to needless and inexcusable delays. Often this is thoughtless, and occasionally some physician thinks he is thereby impressing the patient with his importance, but it is more likely that he is driving his patient to a more considerate physician.

There are times, of course, when it is essential to dictate a letter to the secretary at once, but then the patient has a right to expect an apology. There is never an excuse for a physician to dawdle over breakfast or dinner well into the office hour while a group of people are impatiently cooling their heels.

A patient's time is important to him, if to no one else, and an application of the Golden Rule will pay the physician dividends. It sometimes is worth while when the physician becomes the patient and has an opportunity to assume the patient's outlook. After a few such experiences he is apt to be a bit more considerate.—*The Weekly Roster and Medical Digest*.

Kaufman, in the *Ohio State Medical Journal* for March, reports a novel yet effective method of removal of powder burns in the skin about the face. He used a small burr, attached to a dental engine, pressing the revolving burr against the skin under which the powder mark was buried. He states that the revolving action forced the powder mark to the surface, where it was removed. The areas thus treated were painted with tincture of metaphen and a dressing applied; healing occurred within three weeks, and there was no scar tissue.—*From Journal of the Indiana State Medical Association*.

"Charity is the eminent virtue of the medical profession. Show me the garret or the cellar which its messengers do not penetrate; tell me of the pestilence which its heroes have not braced in their errands of mercy; name to me the — practitioner who is not ready to be the servant of servants in the case of humanity — and whose footsteps you will find in the path of every haunt of stricken humanity.—Oliver Wendell Holmes.

According to Science Service, the U. S. Navy is shipping to Cuba a new 500-bed mobile hospital that will be rushed to any outpost in the Western Hemisphere where American fighting forces may need hospital care. The staff will include thirty medical officers and 300 enlisted men of the Navy.

Nothing is more important at the present time than to continue and to intensify the campaign against tuberculosis and against syphilis, and I hope that no one will permit his attention to be swayed from the objectives we have in mind, because the fight against these diseases is more important at a time of crisis as a measure of national defense than it is in normal times.—Frank C. Boudreau, M.D.

LONDON BOMBINGS DEVELOP NEW USE FOR STETHOSCOPE

A new use for the stethoscope is reported by the regular London, England, correspondent of *The Journal of the American Medical Association* in the March 15 issue. He says:

"In gratitude for his work in removing delayed action bombs which fell in the east end of London, Capt. Robert Davies, who is in command of the bomb disposal squad, has been presented with a stethoscope by the resident staff of one of the hospitals. He has frequently borrowed a stethoscope from the hospital in order to listen to the ticking of delayed action bombs before removing them."—*Journal of The Indiana State Medical Association*.

Sir Frederick Banting, co-discoverer of insulin, was killed in February in an airplane accident in the snowy wastes of Newfoundland. The plane had set out for England, where Dr. Banting was to engage in some sort of secret war mission. Thus came to an untimely end the life of a man who had done much to solve the problem of diabetes. Thousands upon thousands of folks owe their present existence to his discovery of insulin for, prior to that time, the diabetic was doomed to early death.—*From Journal of the Indiana State Medical Association*.

News of the State

Joseph Beek addressed the Vermilion County Medical Society on April 1st on the subject of "Ear Nose & Throat Program."

Lt. Col. Eugene Reinartz, Dr. Alphonse M. Schwitalla, H. B. G. Robinson, Henry W. Woltman, Otto C. Krebs, Charles M. McKenna, Robert S. Berghoff and Angelo S. Geraci participated in a Post Graduate Conference sponsored by the 9th and 10th Councilor Districts on April 3rd.

William B. Rayercraft addressed the Community Civic Club, 3713 Gunderson Avenue, Berwyn, Wednesday, April 2nd. "Home Defenses Against Tuberculosis" was the subject of Dr. Rayercraft's discussion.

Willard C. Scrivner addressed the Madison County Medical Society on an obstetrical subject on April 4th.

Reno Rose gave a talk on "Pneumonia" before Hancock County Medical Society on April 7th.

J. Ernest Breed gave a paper on "Radium Treatment of Angiomas" before the Hancock County Medical Society on April 7th.

Samuel B. Broder talked on "Crime and Prison Life" before the Joliet Kiwanis Club on April 7th.

P. A. Teschner addressed the students of Concordia College, River Forest, Illinois, on April 8, 1941, at 7:00 P. M. "Your Health Tomorrow" was the subject of Dr. Teschner's talk.

James H. Hutton addressed the McLean County Medical Society at Bloomington, Illinois, the 8th of April.

Clifford J. Barborka addressed the Alabama Dental Association at Birmingham April 8th on the subject, "Sub-clinical States of Deficiency Diseases."

Benj. H. Neiman addressed the staff of Passavant Memorial Hospital, Jacksonville, Illinois, on April 8th. The subject was "The Pathology of Pneumonia."

George J. Musgrave and Charles F. Sawyer presented the scientific program at the Annual Meeting of the Mercer County Medical Society at Aledo on April 8th.

Reno Rosi addressed the Bureau County Medical Society on April 8th on the subject of Pneumonia.

Eugene B. Perry gave a talk on "The Illinois Marriage Law and What It Means" before the Kershaw Parent-Teachers Association on April 10th.

Nathan Smith Davis, III, was reelected President of the Chicago Academy of Sciences at the eighty-fourth annual meeting of the Academy on Monday evening, April 14, 1941. The speaker of the evening, A. C. Ivy, was elected an honorary member of the Academy.

Benjamin Goldberg talked on Tuberculosis before the Health Chairmen of the Illinois Federation of Women's Clubs on April 14th.

Julius B. Novak, Medical Director of the Tuberculosis Institute of Chicago and Cook County, addressed a group of nurses of the Alexian Brothers Hospital, 1200 West Belden Avenue, Chicago, on Tuesday, April 15. "The Prevention of Tuberculosis" was discussed by Dr. Novak.

Harry M. Hedge spoke to the Metropolitan Junior Woman's Club at Geneva, Ill., April 15th. He presented the subject, "The Skin and Cosmetics."

H. W. Elghammer addressed the New South Shore High School Parent-Teacher Association the 16th of April on "Understanding the Adolescent."

Margaret M. Kunde spoke to the Cicero Woman's Club on April 16th.

A. J. Arieff addressed the Bowen High School Parent-Teacher Association April 17th on "Mental and Physical Health for the Modern Youth."

Mary G. Schroeder addressed the senior girls of the Carl Schurz High School on April 17th.

Benjamin H. Breakstone addressed the Workers Alliance at 1102 North Wells Street, April 19th. Subject, "What Surgery Has Done for Humanity."

W. K. Ford spoke on "The Modern Problem of Syphilis" before the Oregon P. T. A. on April 21st.

The Educational Committee arranged programs for Chicago Schools celebrating Youth Week with the following doctors speaking: Frank J. Jirka, Paul A. Teschner, Harold Shellow, E. A. Skolnik, M. J. Kiley, C. H. Connor, R. T. Farley, Minnie Perlstein, M. I. Kaplan, A. F. Gareiss, Vernon R. DeYoung, Edward Healy, R. K. Packard, Myron Felsher, Frank B. Kirby, C. J. White, W. W. Tobin, C. Duner, J. Prohovnik, Harry Dooley, J. R. Webster, A. I. Edison, Bertha Shafer, S. C. Kehl, F. J. Corper.

Geza de Takats, Don C. Sutton, James P. Simonds, William F. Moncreiff, Frank P. Hammond, Albert Nehf, C. A. Perrodin, R. F. Bedard and V. J. Kelly presented the program at a clinical conference in Kankakee on April 24th.

E. S. Hamilton gave a talk on "Medical Economics" before the Livingston County Medical Society on April 22nd.

I. Pritikin spoke on "Plan for Hospital Care" before a Chicago School on April 26th.

P. A. Teschner talked to a Study Group of the Gross School, Brookfield, on April 25th.

Groves B. Smith addressed a group in Benld on April 22nd on the subject, "Facing the Forties."

Hugo Rony addressed the Woman's Auxiliary of Rock Island on April 30th, subject, "Glands & Personality."

Mary Louise Newman addressed the Christian County Home Bureau on April 30th on "Cancer."

W. K. Ford spoke before the Stephenson County Home Bureau in Freeport on April 29th, subject, "Cancer."

James H. Hutton addressed the J. Sterling Morton High School in Cicero on April 30th, subject, "Medicine as a Profession."

Harold D. Palmer spoke before the DeKalb County Medical Society on May 1st, subject, "The Anemias."

Herbert E. Landes addressed the Will-Grundy County Medical Society on May 2nd, subject, "Hematuria."

Paul Starr and Kellogg Speed presented the scientific program before the Henry County Medical Society on May 8th.

Charles H. Phifer addressed the Morgan Park High School Senior Class on May 8th on "Should the Boy or Girl Become a Doctor?"

P. A. Teschner addressed the Fair Oaks Presbyterian Church on May 8th — "Gilding the Lily."

Herbert E. Schmitz spoke on "Carcinoma of the Uterus" before the Roseland Community Hospital Gynecological Department on May 6th.

J. C. Rheingold addressed the Lawson and McCormick Y's on May 8th on "Physical and Mental Harmony in Marriage."

Rollo K. Packard will speak before the Rotary Club of Maywood on May 15th.

E. B. Neff will speak before the Bureau County Home Bureau at Neponset on May 15th on the subject of "Cancer."

Marie Hinrichs will talk on Maternal Welfare before the Belleville Woman's Club on May 26th.

WANTED — By physician, age 37. With 7 years general and surgical practice and with a good Urological training, to purchase a practice, partnership or association with group. Box M241.

WANTED to purchase general practice in Illinois; or assistantship to surgeon or general practitioner; Locum tenens considered. By young physician, 3½ years hospital training, excellent references. — Answers c/o Illinois Medical Journal, Box M141.

Coming Meetings

May 13 — Winnebago County Medical Society — Rockford — Luncheon at Noon — Dr. Paul W. Greeley — "Plastic Surgery."

May 13 — Effingham County Medical Society — Benwood Hotel, Effingham — Dinner, 6:30 P. M. — Dr. R. A. Tearnan — "Fractures."

May 13 — Bureau County Medical Society — St. Margaret's Hospital, Spring Valley — 6:30 Dinner — Dr. Joseph E. Schaefer — "Plastic and Oral Surgery."

May 15 — Lee County Medical Society — Nachusa Hotel, Dixon, Illinois — Dinner 6:30 P. M. — Dr. Harry Mock — "Skull Fractures."

May 15 — Will-Grundy County Medical Society — Louis Joliet Hotel, Joliet — Luncheon at Noon — Dr. Armando J. Rotondi — "Bronchial Asthma."

May 20, 21, 22 — ANNUAL MEETING OF THE ILLINOIS STATE MEDICAL SOCIETY, Palmer House, Chicago.

Marriages

LEO J. ESCHELBACHER, Mount Vernon, Ill., to Miss Inge Wachelheim of Chicago in St. Louis, February 4.

Deaths

SAMUEL DUFF ANDERSON, Littleton, Ill.; University Medical College of Kansas City, Mo., 1908; formerly a minister; aged 81; died, February 17, in the Culbertson Hospital, Rushville, of arteriosclerosis and heart disease.

CHARLES RICHARD BATES, Ladd, Ill.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1908; served during the World War; Secretary of the Bureau County Medical Society; aged 56; died, February 19, of bacterial endocarditis and dental infection.

IRA ALFRED BOTTS, Industry, Ill.; Northwestern Uni-

versity Medical School, Chicago, 1893; member of the Illinois State Medical Society; aged 72; died, January 16, of cerebral hemorrhage.

DR. CHARLES MARK BROOKINGS died March 9, 1941 at Marshall Browning Hospital, Du Quoin, Ill.; aged 72 years. He was a graduate of Northwestern University School of Pharmacy and of the medical school of Washington University, St. Louis, Mo. Surviving him are his widow, Mrs. Jessie Pope Brookings and one daughter, Mrs. Deneen Watson, Glen Ellyn, Illinois.

BERTHA LAWTON CLINTON, Paris, Ill.; Northwestern University Woman's Medical School, Chicago, 1899; aged 68; on the staff of the Paris Hospital, where she died, February 11, of coronary occlusion.

DR. LOUIS L. GREGORY, Urbana, Illinois, was born in Rockford, Illinois, October 18th, 1850. He graduated from Beloit College in 1884 and from Northwestern University Medical School in 1888. He served a year's internship at St. Luke's Hospital, Chicago after which he practiced medicine on the north side of Chicago for thirty-seven years. He left Chicago and moved to Urbana to be with his son, Dr. Lewis T. Gregory in 1925 when his wife died. While in Chicago he was at one time on the staff of the Cook County Hospital, Ravenswood Hospital, Henrotin Hospital and for many years was attending physician to the Daily News Sanitarium for sick babies.

GEORGE GIVINS HARVEY, Springfield, Ill.; Johns Hopkins University School of Medicine, Baltimore, 1919; aged 46; died, February 16, of coronary occlusion.

ALBERT FRANCIS HENNING, Chicago; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1904; member of the Illinois State Medical Society; fellow of the American College of Surgeons; aged 61; died, January 25, in Homewood, Ill., of myocarditis.

DR. RICHARD M. HERRICK was born February 28, 1865, in Putnam County, and died at his home, in Wyanet, on March 25, 1941.

As a young man, Dr. Herrick was a teacher in the rural schools of this community and the grade school of this village. He was a graduate of Wheaton College and the Lectic Medical School of Cincinnati, Ohio and would have completed fifty years practice in June. During his medical career he served the communities of Murryville, Florid, La Salle and Oklahoma City, Oklahoma.

During the World War Dr. Herrick was Captain of the Medical Reserve Corps and entered active service at Fort Leavenworth, Kansas on July 8, 1918. He was a member of the Methodist Church, the Masonic lodge, the American Legion and the Bureau County Medical Association. He is survived by his wife, his daughter, Florence, two grandsons, Herrick Reid of Ogden, Iowa, Paul Reid of Wyanet, and one sister, Mrs. Laban Ball of Peru.

SIEGMUND HIRSCHFELD, Chicago; Loyola University School of Medicine, Chicago, 1917; aged 71; died, January 25, in the Illinois Masonic Hospital of injuries received in a fall.

CHARLES PATRICK HOFFMAN, Danville, Ill.; Miami Medical College, Cincinnati, 1896; member of the Illinois State Medical Society; aged 65; died, January 26, of heart disease.

CHARLES JESSE HUTTON, Atlanta, Illinois, was born August 4, 1881 in Flemingsbury, Kentucky. He was a graduate of Barnes Medical College of St. Louis, Mo., in 1911.

Dr. Hutton was a member of the Logan County Medical Society; the Illinois State Medical Society and a Fellow of the American Medical Association.

Mrs. Edith Robinson Hutton survives him.

HENRY JOSEPH JURGENS, Quincy, Ill.; Keokuk (Iowa) Medical College, 1896; fellow of the American College of Surgeons; past president of the Adams County Medical Society; served during the World War; aged 69; on the staff of St. Mary's Hospital, where he died, January 8, injuries received in an automobile accident.

JOHN DAVIS KALES, Chicago; Harvard Medical School, Boston, 1887; aged 76; died, February 28, of carcinoma of the pancreas.

AMELIA LOUISE KLEHM, Chicago; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1902; aged 70; since 1925 on the staff of St. Francis Hospital, Evanston, where she died, February 22, of melanosis of the eye with metastasis of the liver.

FRANCIS BONAVENTURE KROL, Chicago; Chicago Medical School, 1921; member of the Illinois State Medical Society; aged 44; died, January 12, in the Albert Merritt Billings Hospital of peritonitis.

JOHN B. LUDWIG, Lemont, Ill.; Bennett College of Eclectic Medicine and Surgery, Chicago, 1893, aged 74; died, January 30, in the Silver Cross Hospital, Joliet, of cerebral hemorrhage.

JOHN GEORGE M. LUTTENBERGER, Chicago; Barnes Medical College, St. Louis, 1906; aged 77; died, January 7, at the Illinois Masonic Hospital of cardiac decompensation.

JESSE GARFIELD MAXON, Harvard, Ill.; Hahnemann Medical College and Hospital, Chicago, 1910; past president and secretary of the McHenry County Medical Society; for many years mayor; served during the World War; formerly president of the McHenry County Tuberculosis Association; aged 60; died, February 7.

JAMES M. McCLANAHAN, Kirkwood, Illinois, was born in Adams County, Ohio, March 26, 1850, and died at his home March 24, 1941 following a brief illness. Dr. McClanahan took his medical course at the old Chicago Medical School, later becoming Northwestern University Medical School. He graduated in 1874. His entire professional life was spent in Warren County. He continued to see patients in his office until a short time before his death. On January 6, 1938, Dr. McClanahan received certificate number one in the Fifty Year Club of the Illinois State Medical Society. This was presented to him only a day or two after the Club was organized by the Council.

Enjoying a large country practice for many years, Dr. McClanahan had many unusual experiences, one of which was performing an operation to deliver a live child from a mother who died in convulsions a few moments earlier. Although this occurred more than 40 years ago, the "baby" is still living.

Dr. McClanahan was a member of the Warren County and Illinois State Medical Societies, and for many years maintained his Fellowship in the American Medical Association.

He leaves two sons, Drs. Harold and Scott McClanahan who have been practicing at White Bear Lake, Minnesota, for a number of years.

NELSON EUGENE OLIVER, Thornton, Ill.; Rush Medical College, Chicago, 1880; member of the Illinois State Medical Society; aged 83; died, January 8.

HUGH ALEXIS RASMUSSEN, Beardstown, Ill.; University of Illinois College of Medicine, Chicago, 1930; formerly a member of the U. S. Indian Service; aged 35; died, February 23, at Maywood of burns and suffocation when a cigaret ignited the chair in which he had fallen asleep.

HERBERT RANKIN STRUTHERS, Grayslake, Ill.; College of Physicians and Surgeons of Chicago, School of Medicine of the University, 1901; member of the Illinois State Medical Society; served during the World War; aged 68; died, February 2, in the Veterans Administration Facility, Hines, of hypertrophy of the prostate.

WILLIAM HENRY WALSH, Chicago; Medico-Chirurgical College of Philadelphia, 1909; in the hospital corps of the United States Army during the Philippine Insurrection, 1899-1900; chief sanitary inspector of the Insular Bureau of Health of the Philippine Islands from 1900 to 1904; acting assistant surgeon in the United States Public Health Service from 1909 to 1911; superintendent of the Philadelphia Hospital for Contagious Diseases from 1912 to 1914; chief resident physician at the Philadelphia General Hospital in 1914; medical director of the Philadelphia Children's Hospital from 1914 to 1916; executive secretary of the American Hospital Association from 1916 to 1918 and from 1924 through 1927; secretary of the hospital board of the United States Public Health Service, 1919-1920; served as hospital consultant in various countries; consultant, Chicago Health Department; during the World War served as a major on the staff of the surgeon general of the army and as commandant of base hospital number 58 at Camp Grant, Ill., and in France with the rank of lieutenant colonel; member of the Medical Society of the State of Pennsylvania, American Association of Industrial Physicians and Surgeons, Association of Military Surgeons and the American Public Health Association; fellow of the American College of Physicians; aged 59; died, March 28, in the Albert Merritt Billings Hospital of carcinoma of the stomach.

GEORGE E. WHEELER, Villa Park, Ill.; Reliance Medical College, Chicago, 1909; also a dentist; aged 72, died, January 29, in Sullivan of pneumonia.

Are the Neuritic Symptoms of Pregnancy *due to a deficiency* *of vitamin B₁ (thiamine) ?*

SUCH common neuritic symptoms of pregnancy as pains in arms and legs, muscle weakness, and (less frequent but more serious) paralysis of the extremities may result from a shortage of antineuritic vitamins, recent investigations appear to show. Although neuronitis of pregnancy has long been considered a toxemia, no toxins have ever been identified.

Clinical observations of Strauss and McDonald lead to the conclusion that the condition is a dietary deficiency disorder similar to beriberi, caused by lack of vitamin B₁. They report recovery in their cases receiving this therapy, including dried brewers' yeast.

Hyperemesis as Cause of Avitaminosis

Wechsler observes that all cases of polyneuritis of pregnancy recorded in the literature were preceded by long periods of severe vomiting. "It would seem," he adds, "that because of actual starvation these patients suffered from avitaminosis and consequent neuritis," a view likewise held by Hirst, Luikart, and Gustafson. Plass and Mengert observe that the practice of giving high carbohydrate feedings for hyperemesis gravidarum is still more likely to cause avitaminosis.

Dried brewers' yeast, as it is far richer than any other food in vitamin B₁ (thiamine), is being used with benefit both in the prevention and treatment of polyneuritic symptoms of pregnancy. Lewy found that additions of yeast to the diet reduced electric irritability of the peripheral nerves and brought clinical improvement. Vorhaus states that he and his associates, after administering large amounts of vitamin B₁ (thiamine) to 250 patients having various types of neuritis, including that of pregnancy, observed in about 90% of cases "varying degrees of improvement, i.e., from partial relief of pain to complete disappearance of all symptoms."

Need for Vitamin B₁ (thiamine) in Lactation

Evans and Burr, Hartwell, Sure and co-workers, and Macy *et al* are among numerous authorities who find that the nursing mother also needs a supplement of vitamin B₁ (thiamine) from 3 to 5 times the normal requirement. It is accepted that during pregnancy and lactation the requirement for vitamin G (riboflavin) is increased.



Consisting of nonviable yeast, Mead's Brewers Yeast Tablets offer not less than 50 International vitamin B₁ (thiamine) units and 50 Sherman vitamin G (riboflavin) units per gram (20 International units of vitamin B₁ and 20 Sherman units of vitamin G per tablet).

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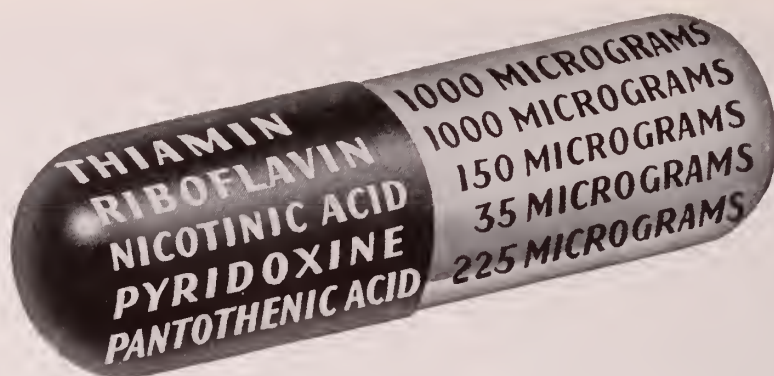
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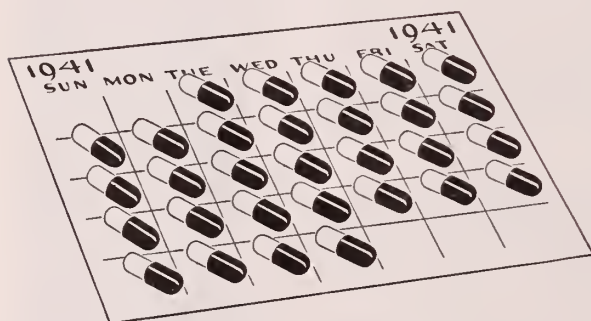
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Lithium chlorid	21.07	64.49	46.43
Potass. chlorid	361.91	789.54	714.86
Sodium chlorid	2,010.48	8,594.84	4,233.14
Potass. bromid	9.23	160.00	13.90
Potass. iodid	1.10	4.80	1.36
Sodium sulphate	None	None	None
Sod. metaborate	Trace	None	Trace
Sodium nitrate	Trace	Trace	Trace
Sodium nitrite	Trace	Trace	Trace
Sodium bicarb.	2,213.78	424.71	1,331.15
Calcium bicarb.	1,829.14	3,380.84	2,519.74
Barium bicarb.	16.67	25.65	25.00
Strontium bicarb.	Trace	Trace	Trace
Ferrous bicarb.	9.94	40.07	5.86
Magnes. bicarb.	753.89	2,244.88	1,186.57
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THE LOCAL MEDICAL SOCIETY

The function of a medical society, as I see it, is to furnish a common meeting place for the discussion and interchange of knowledge and ideas among the members of our profession which should ultimately lead to the betterment of conditions of health and medical practice, through the increase in interest in and understanding of each other's problems and perplexities. This concept applies whether the gathering be a small local county group, or a national or sectional assembly such as this. When any of us attends such a meeting, our presence implies a dual role. We come to exchange ideas, to discuss problems; to give and to take, to teach and to learn. In so doing we not only stimulate our own interest and increase our own store of knowledge and efficiency, but also, by our active participation, we become a teacher insofar as we stimulate our colleagues in like manner. The experience gained in preparing and presenting a paper, however simple, may stand us in good stead at some future time, and its content may furnish just the help that some professional brother was seeking to solve some problem of his own. Your local medical society can become an active, useful postgraduate school, and you a valued member of its faculty, if you will but grasp the opportunity that offers for the taking.—J. M. T. Finney, Jr., M.D., *Chairman's Address, Section on Surgery, Southern Medical Association, Thirty-Fourth Annual Meeting, Louisville, November 12-15, 1940.*

THE ADRENALS

The use of a synthetic product, desoxycorticosterone acetate, alleged to represent the adrenal cortical hormone, in treating Addison's disease was highly praised in recent literature. However, it has proven to lack the efficacy of potent adrenal cortex preparations, as well as effecting highly undesirable toxic manifestations. My own experience with this substance confirms these findings. While it appeared to be capable of prolonging life in some adrenalectomized animals it also exerted toxic effects. In Addison's disease it failed to produce any beneficial influence but rather led to decline in the general condition, which was promptly corrected by administration of potent adrenal extract. Among those cases in which beneficial results were reported, it is observed that adrenal extract or salt or both, were administered in addition to the synthetic product — and they were reported much too soon for proper evaluation of the final results.

The routine clinical use of this synthetic product as a prophylactic against surgical shock, on the bases of a few inconclusive experiments on a small number of rats, seems almost incredible. It may be asked, why would a surgeon undertake to perform an operation if he presupposes that he is going to induce shock?—J. M. Rogoff, M.D., Pittsburgh, Pa.; *Jour. of Med., Cincinnati*; Vol. 21, No. 10, December, 1940.

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THE SOLUTION OF MANY COMMON FOOT PROBLEMS

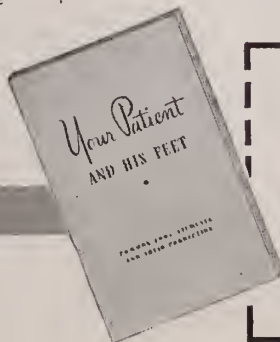


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At left, the typical ankle pronation of "weak arches" or "flat feet." Note how the line of weight bearing is moved from the center of the calcaneus to the inner malleolus, completely upsetting mechanics of the foot and throwing the weight from the outer to the inner metatarsals. At right, normal ankle position as maintained by Health Spot Shoes.



Note the figures of proper weight distribution. Health Spot Shoes usually correct abnormal weight bearing, lessening the amount carried on the forepart of the 'foot.



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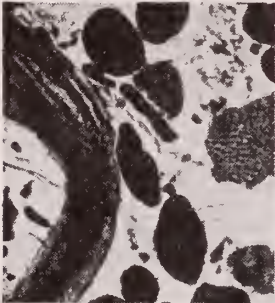
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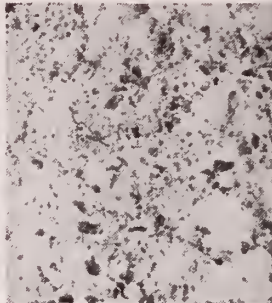


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THE DOCTOR COMPARES SOCIALISM VS. SOCIABILITY

How social is socialism? The obvious answer seems to be: about as companionable as the socialists! In the recent past, socialism was perhaps farthest advanced in Germany, Austria, the Irish Free State, and the Scandinavian countries. In 1936 France came under the control of a socialist government for better or worse and Spain overthrew its semisocialist government in favor of fascism.

Somehow the cooperative movement among peoples seems to revert to the old-fashioned practice of blood-letting as a cure-all, a practice discarded as inefficient, ineffective and outmoded years ago by the medical profession. Hence it has been with some misgivings perhaps that physicians have watched the carefully fostered growth of socialism in this country. For physicians are really very sociable people. They get around among the folks quite a lot.

Among the people of this democracy the physicians circulate — among the friendly, sociable people riding in automobiles, laughing, dancing, going to church, voting in free elections, eating butter, drinking beer, arguing about any — and everything under the sun, listening to radios, attending prize fights, working to produce useful and beautiful things, living together in sociability. Among these people physicians move yet awhile.

And in their hearts they wonder about this thing called socialism, this cooperative movement which has produced all the fine things of life in modern Europe; the fine burning of books, the magnificent bombings of Ethiopians, the exquisite torturing and murder of Jews, the elegant collapse of France, the splendid civil war in Spain, the sublime demolition of architectural landmarks in Britain, the esthetic conscription of labor, the graceful starvation of human beings, the imposing exile of human herds, the superb walling-in of the "begats" of Abraham.

And in their minds they ponder about this thing called socialism, this cooperative movement in this hemisphere which commences now to produce many things in America: Social Security, and guns and tanks; compulsory sickness insurance, and men marching in uniform in peacetime, and debt, and warplanes; the socialization of medicine, and warships, torpedoes, bombs; lease-lend bills and taxes for the happy folk to pay so that they can be more expeditiously socialized in the shadow of democracy.

How social is socialism? Your guess is as good as ours. You have eyes to see and ears to hear with.

Look in the open book of history; listen, and you will hear the dull tramp of marching feet.

—New York State Journal of Medicine,
February 15, 1941.

There's one liberty we have in a democracy we would be better off without — that's the liberty to be needlessly unhealthy. Paul Brooks, M.D.

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AT MEDICAL CONVENTIONS



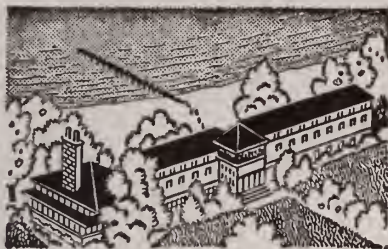
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*Laryngoscope, Feb. 1935, Vol. XLV, No. 2, 149-154
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EARLY DIAGNOSIS OF CANCER OF SPINE

From their experience with 7 patients, Samuel A. Wolfson, M. D., Samuel Reznick, M. D., and Lewis Gunther, M. D., Los Angeles, believe that an early and definite diagnosis of malignant spinal metastases can be made in spite of negative x-ray evidence, they report in *The Journal of the American Medical Association*.

They believe that when pain in the spinal column is limited to one or two spinal nerve roots, associated with localized tenderness; when the rate at which red blood cells precipitate is increased; when there is an increased level of phosphatase in the blood serum and there is no obvious explanation and demonstrable cause for these changes, that an early diagnosis of spinal metastases can be made.—*Journal of the Nebraska State Medical Society*.

The American Social Hygiene Association very properly recommends that appropriate recreational facilities be provided immediately adjacent to the camps where civilian trainees are located. The recommendation is based on the theory that these young men will seek some sort of diversion in their periods of "off duty," and that such facilities will do much to keep down the incidence of venereal disease among this group. As the *Peru Tribune* so aptly points out,

"Men in barracks are no more plaster saints than they were in Kipling's day. Released from heavy army duties, they will have fun; and if opportunities for decent, wholesome fun are lacking, they will seek whatever kind is available."—*From Journal of Indiana State Medical Association*.

The Army Medical Library has sent out a request for reprints of medical and surgical articles, to which we urge our members to respond. This library is rapidly becoming one of the best in the country and in time promises to be able to supply information on almost any medical subject. Nor should one overlook the Army Medical Museum, when one comes across specimens of unusual interest. The laboratory equipment and personnel is of the highest order and, in addition, the laboratory makes a practice of submitting sections to pathologists of note throughout the country, so that they, too, may unite in the making of a final diagnosis.—*From Journal of Indiana State Medical Association*.

The patient has no more right to all the truth than he has to all the medicine in your saddlebag. He should get only so much as is good for him.—*Oliver Wendell Holmes*.

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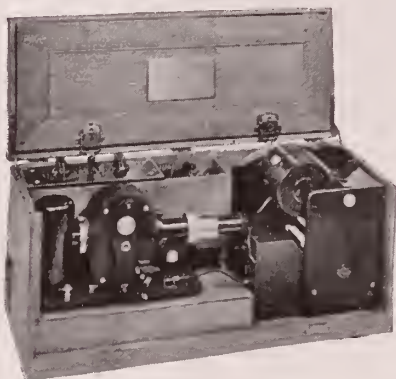
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SYMPTOMS OF ARACHNIDISM

In order to describe accurately the symptoms of arachnidism, Blair allowed an adult female black widow spider to bite him for ten seconds on one of his fingers. He noticed a bluish pin-point mark at the site of the bite and divided the course into three stages.

First Stage: Lymphatic absorption, with a throbbing hot pain in the bitten finger; the pain extending upward to the metacarpus within 12 minutes after the bite. Within 15 minutes there was a dull aching pain in the axilla, the whole arm had a dull, aching, slightly numb feeling, followed by an aching pain over the left side of the chest; then pains over the precordium.

Second Stage: Vascular Dissemination — There was a dull, drowsy, lethargic feeling, aching epigastric pains, a flushed headachy feeling with aching in the neck muscles and a feeling of malaise.

At this stage the observations were taken over by an associate who reported that severe pains were present over the whole abdomen, which was tense.

There was a trembly feeling in the legs. Two hours later there was severe aching in the lumbar region, abdomen and chest; speech was difficult and jerky, respirations rapid and labored, the abdomen was rigid; the heart sounds slow, regular and normal in character; the pulse weak and thready, rate 60. Agonizing lumbar pains followed. The patient stated that it was torture to lie still on his back while the electrocardiograms, which were normal, were being made. He was placed in a hot bath, which gave some relief.

Third Stage: Elimination — Three hours later he felt better and was given morphine, one-fourth grain. Vomiting now occurred.

Pain of various kinds persisted in varying degrees for a period of eight days, following which his health has remained excellent.

Local Reactions: The injury caused by the bite usually soon disappears but may be followed by a secondary infection. Sloughing does not occur. — F. C. Hodges, M.D., Huntington; W. Va. Med. Jour., Vol. 36, No. 12, December, 1940.

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AVOID OPERATIONS IN SPRING IS ADVICE TO SURGEONS

Avoid surgical operations in late winter and spring, if possible, Prof. William F. Petersen, of the University of Illinois College of Medicine, warned members of the American College of Surgeons.

The patient's resistance varies with the season, Prof. Petersen explained.

"If you will examine your hospital records," he said, "you will find that postoperative complications — shock, vascular accidents, and infection — occur more often in the late winter and spring. It is at this season that we are more often called upon to operate upon patients, because individuals are more often acutely ill. Avoiding unnecessary or interval operative intervention during this precarious season will help in lowering postoperative infection."

Chilling is also a danger, even if apparently insignificant, Prof. Petersen also warned, because it lowers the resistance to the passage of germs present on mucous membranes. The anesthetic itself entails heat loss from the body, he pointed out. A patient whose skin is covered with moist perspiration when exposed to even a minor draft is subject to undue heat loss.—*Science News Letter*, Nov. 2, 1940.



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PREPAREDNESS SPELLS ANNOYANCE AND SACRIFICE

Since adequate medical service for "armed forces" is a primary essential and our nation is rapidly adding a million men to the Army and Navy, the physicians of the nation are being harrassed by assignments and requests. The assignments are falling first on the younger practitioners through their previously existing military connections and experience. Requests for information which may in many instances lead to early assignments to active military or secondary defense services are currently the lot of all physicians. Witness in this issue of the JOURNAL references to the "wind-up" of the American Medical Association questionnaire to all Pennsylvania physicians as well as the introduction to them of the county-state questionnaire more specifically designed to meet local needs arising from the ever-increasing withdrawal of physicians from home practice to service with the colors. These are the assignments that so often "spell sacrifice" and leave in their wake the "annoyances" to the physicians remaining at home.

What are some of the annoyances met by as many types of reaction as there are differing personality types among the physicians?

First, the most widespread but the most fleeting are the various questionnaires to be completed.

Second, the absorption of the added professional service arising from the absence in the national service of neighborhood physicians and those who ordinarily would serve as residents in hospitals.

These by-products of medical preparedness lead to others, e.g., (a) Uncle Sam may rule that income tax calculations apply to fees collected by the *locum tenens* of the absent physicians and again to that portion turned over by the former to the latter; (b) in one 200-bed general hospital in Pennsylvania, sans intern or resident, the visiting staff not only attend to "the day's work" but take turns sleeping at the hospital in anticipation of the night's work.

And so it goes and will continue to go until the sacrifices and annoyances of today become the routine of tomorrow and both governmental and community medical service will be delivered in the traditional professional spirit.—*Pennsylvania Medical Journal*.

"Health officers should be concerned with the quality of life as well as the quantity of life," according to Passed Assistant Surgeon Victor H. Vogel of the United States Publicity Health Service. "The capacity to live productively and happily is the biggest problem yet remaining in the public health field." (Public Health Reports Vol. 56, No. 1).

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President of the American Medical Association

An inspired propagandist says that there are forty million people in the United States who are suffering from the lack of medical care because their incomes are less than eight hundred dollars with the consequence that they are unable to maintain adequate standards of living. The remedy he prescribes as socialized medicine after the European manner. He views American evolution as immature because we hesitate to embrace social systems which seem to have failed in Europe and to be poor substitutes for developing programs which have brought medical care in America to higher accomplishments than anywhere else.

The propagandist admits American superiority which he credits to a higher standard of living. . . .

On the contrary, I believe that there is more need than ever to discover the extent of human suffering among those who are existing miserably and the extent to which medical care fails to reach them.

Every city in the United States has thousands of people who are handicapped by bad housing. Senator Wagner is quoted as saying that there are over 400,000 people in the city of New York who live in buildings unfit for human habitation. I can very well believe that story when I am told that there are 250,000 bedrooms in New York City which have no windows. Many of these rooms have multiple occupancy and all are potentially pestilential. Surely American medicine is not responsible for these conditions.

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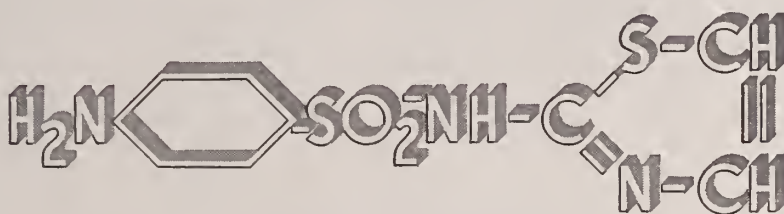
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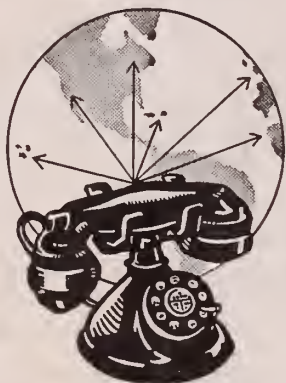
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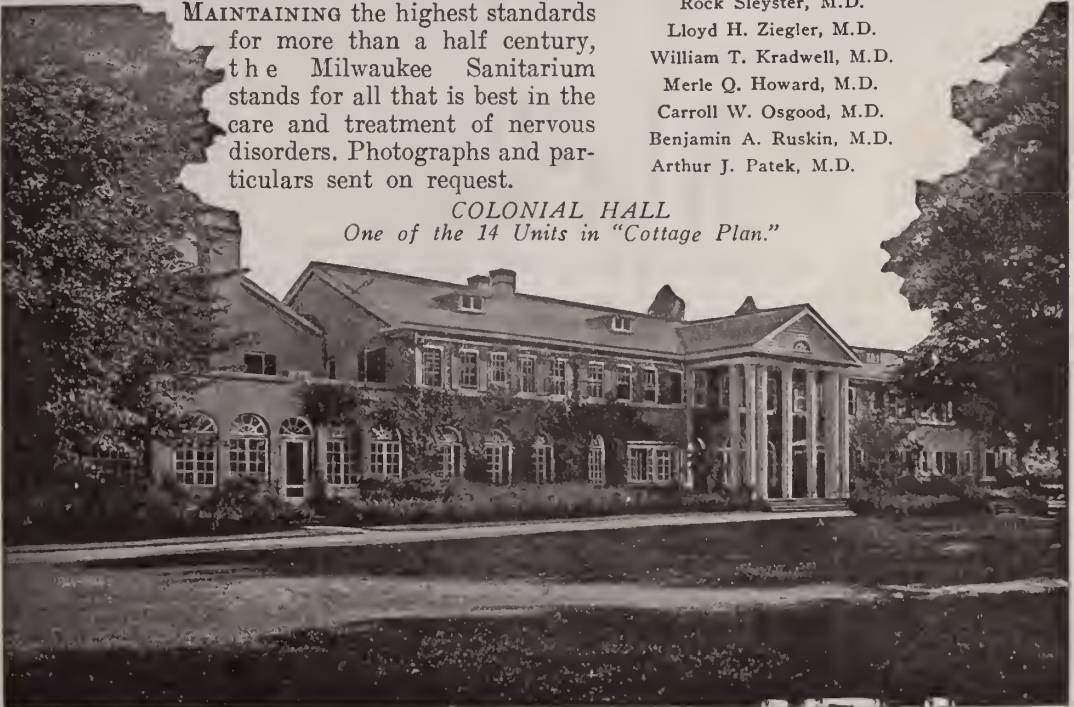
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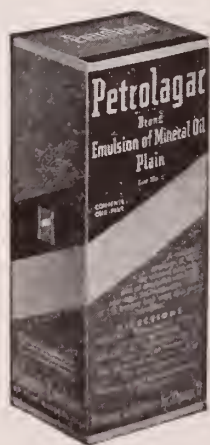
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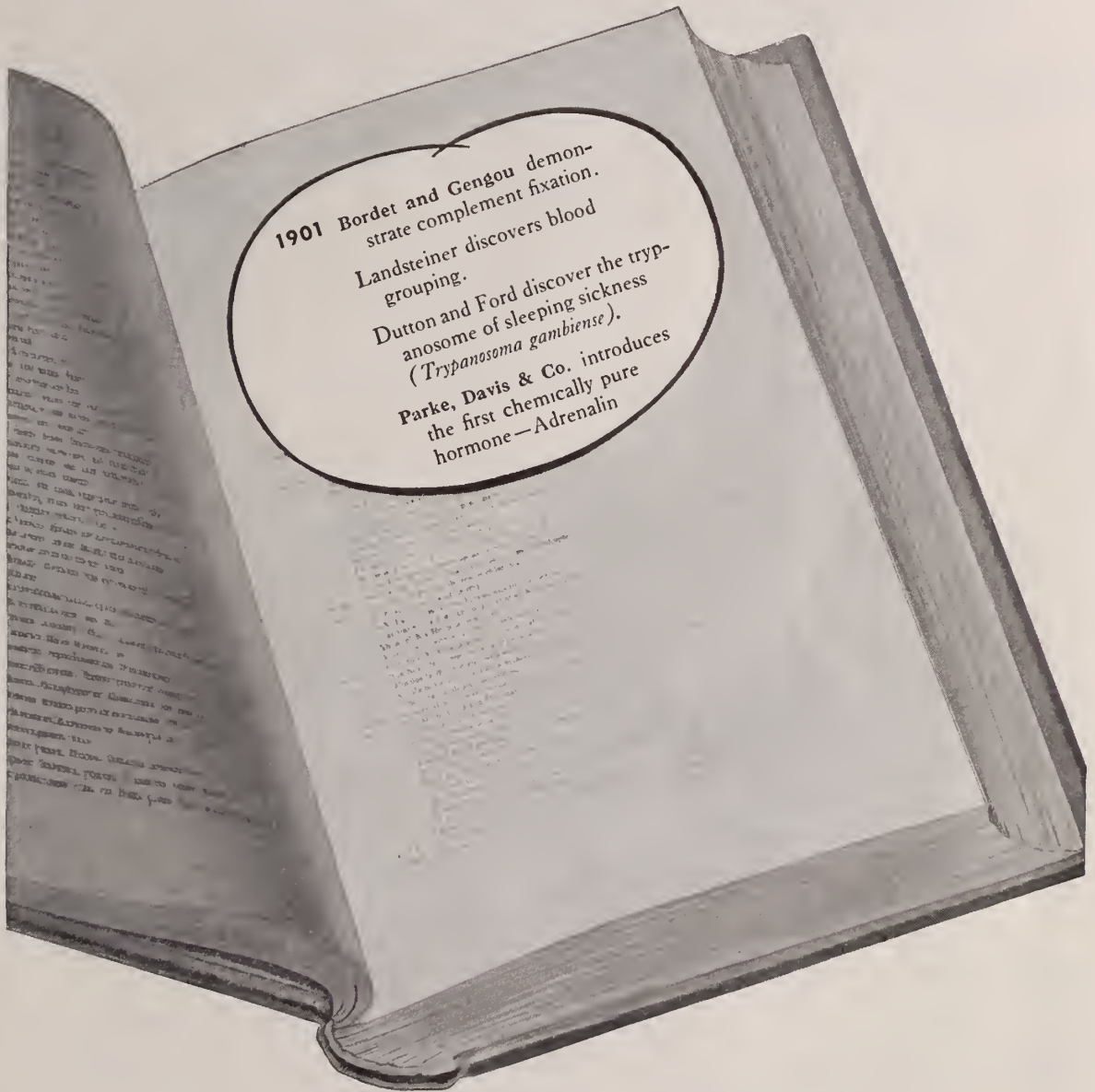
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Kugelmass: "Newer Nutrition in Pediatric Practice." 1940.

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Marriott: "Infant Nutrition." 1930.

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Wright: "Infant Feeding." 1935.



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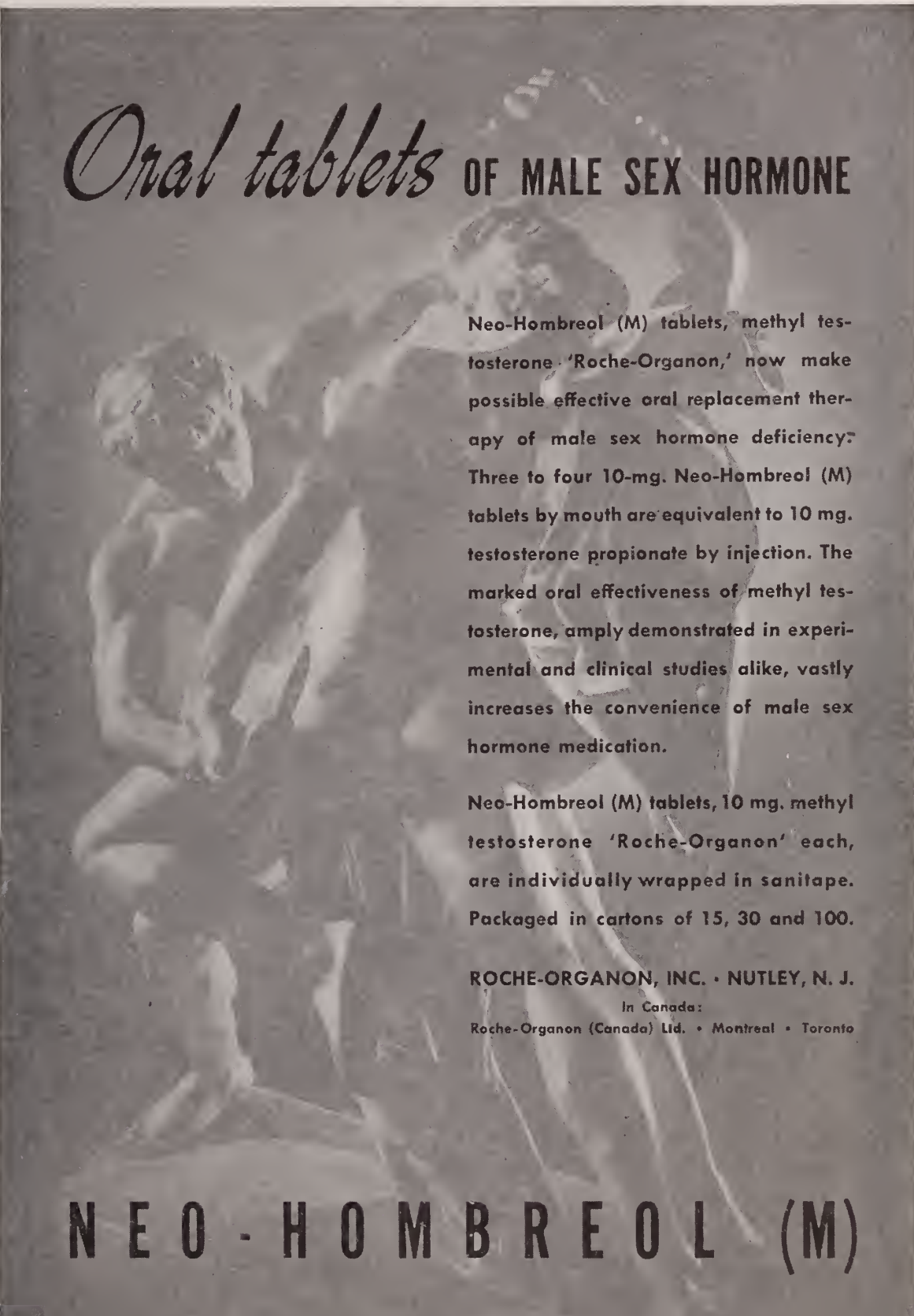
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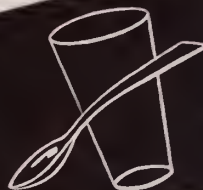
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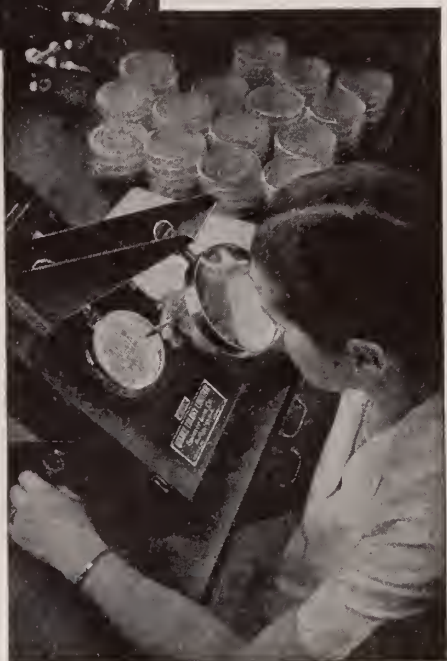


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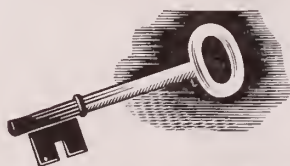
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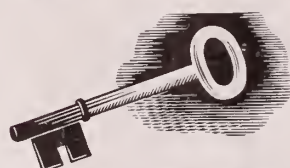
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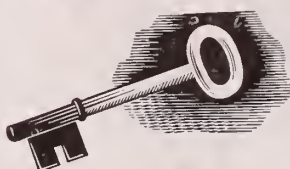
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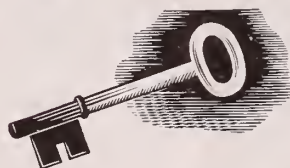
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Nicotinic Acid	8 mg.	9 mg.	4 mg.
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*Archives of Pediatrics—56:Nov., 1939
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ILLINOIS MEDICAL JOURNAL

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*Deceased

Editorials

THE GERIATRICIAN

We have seen during recent decades, a marked change in the average age of the American population. Forty years ago we were informed that the chance on the part of the newborn to reach the age of 65, was 40%, while today this chance has been increased to 60%. Even more recently we have been told that the chances today for an infant to reach the age of 65 are greater than the chances in 1911 for an infant to reach the age of 50. From all indications, these increasing age trends should continue during the next decades.

In medical circles, it has long been known that the care of the aged has been almost as difficult as that of our infants. With the ever increasing number of people reaching advanced ages today, it is necessary for the medical profession to give greater consideration to their medical care. Not merely medical care, but likewise a better consideration is essential along the line of dietary needs, activities and other matters of equal importance to add to their comfort.

When the Social Security Act was placed in our statutes and provisions were made for old age assistance through the State Department of Public Welfare, statisticians informed those responsible for the operation of this portion of the Act, that there would never be a time when more than 75,000 clients would be receiving aid in Illinois. Plans were made with that maximum figure in mind, yet in 1941 we are informed that more than 145,000 old age assistance clients are receiving aid, with applications on file from several thousand others who have attained the age of 65 years. It seems quite logical that this number will gradually increase to a new high within a few years as the life expectancy of the average individual of 65 is today reckoned as 12 years.

As time marches on, the problems relative to the care of the aged will increase materially; and it will be increasingly more difficult to give

them the attention which is deemed most essential to their comfort and best interests.

Many practitioners of the present era can well remember the development of pediatrics, orthopaedics, radiology and a number of the other present day important branches in medicine. It seems quite logical to believe that within a relatively short time we will see an increasing number of men in medicine devoting their entire time to the care of the aged, or to the subject of geriatrics.

There are certain types of disease, largely of a degenerative character, which will be of special interest to geriatricians. Cardio-vascular diseases will be an important consideration, as it is in our consideration of patients in all other age groups.

The cancer problem will likewise be an important one, as the incidence of cancer increases as age advances. Many of the cancer problems will begin with a consideration of pre-cancerous lesions so prevalent among the aged, which may be alleviated easily with the proper early treatment. Cancer research may eventually change the picture materially in regard to the incidence of cancer, but at this time we are told that the chances of developing cancer are one in seven for white females and one in nine for white males.

Diabetes is a problem of great importance in our geriatric consideration; although when it develops in the aged, diabetes is usually more satisfactorily controlled than when it develops at an early age.

The respiratory diseases must be carefully considered as many of our aged patients will eventually succumb to this type of disease. Accidents and more particularly, fractures of the hip and automobile accidents, must be given proper attention. Cerebral accidents, hemorrhage or emboli, will affect a considerable number in the aged group.

Internal accidents such as strangulated hernias, and internal hemorrhage, will be seen occasionally, and we must realize that no age group is immune to appendiceal infections. In the male, prostatic disorders may require prostatectomy or resection, and will be seen in greater numbers as age increases.

It is quite obvious from this brief review, that the geriatrician should have many problems,

equal in number perhaps to those of the pediatrician and other specialistic groups. It will be necessary for him to confer with the internist, the surgeon, the radiologist and others, if he gives proper consideration to the problems arising in his specialty.

In one of the last editorials written by Dr. Charles J. Whalen for the Illinois Medical Journal, he referred to the increasing responsibilities of the young who, each year, are assuming more responsibility for the care of the aged. Perhaps when we see more physicians interested in geriatrics, we will find many more people in this country self-supporting and not in need of federal and state aid when they attain the age of 65.

MEDICAL BENEVOLENCE

For many years Dr. John S. Nagel who has served as a member of the Council of the Illinois State Medical Society for nearly twenty-five years, has had in mind the development of a plan under which disabled members of the Society, the widows or widowers of former members, would receive some monthly benefit while in actual need. At the annual meeting held in May, 1940, the House of Delegates approved the report of the Committee on Medical Benevolence and recommended the immediate development of a system such as had been recommended by the Committee. All details were left to the discretion of the Council.

A committee of three, one to serve for one year, one for two years and the third for a three years term, was named by the President and approved by the House of Delegates; then after 1941 there was to be one member of the committee elected each year for a three year term. After a number of conferences had been held and the Council had given the subject much consideration, the present plan of conducting this benevolence work was approved and placed in operation.

The Council appropriated \$5,000 as a nucleus for the Medical Benevolence Fund. It was proposed that an annual assessment from the membership dues be added to the fund so that eventually only the income from invested funds would be necessary to carry on this important work.

The Committee on Medical Benevolence has publicized the plan, elaborating on the purposes and aims, giving complete information to the



Charles H. Phifer, M. D.
President, Illinois State Medical Society,
1941-1942

C

membership through the Illinois Medical Journal, the Bulletin of the Chicago Medical Society, and through other county society bulletins during the past year.

The first annual report of the Committee was presented before the House of Delegates at the 1941 annual meeting, and the Reference Committee to which the report was referred for study and a report to the House of Delegates at the second meeting, heartily endorsed the work and approved the recommendations made by the Committee.

The Woman's Auxiliary has made medical benevolence one of its principal objectives, and although they had a late start during the past fiscal year, they did accumulate approximately \$1,200.00 for the fund, and they propose to do much more during the coming year. It is quite interesting to note that during the first year all beneficiaries approved were women.

The plan adopted by the Illinois State Medical Society for medical benevolence is quite similar to the one used in the Pennsylvania State Medical Society. The Council and the special Committee on Medical Benevolence received much aid from Dr. Walter F. Donaldson, Secretary of the Pennsylvania Society. At one time during the year, Dr. Donaldson appeared before the Council to give us detailed information on the Pennsylvania plan and answered many questions regarding procedure.

The Benevolence Fund is subject to an annual audit, but no reports will mention names of beneficiaries, merely giving the additions to the fund. Payments from the fund are made only to beneficiaries, and no extra charges will be made against the fund for any other purposes whatever.

It is generally believed within the Illinois State Medical Society that this is one of the most constructive projects developed in recent years, and one which will be of more value as time goes on.

Probably no tuberculous spine ever heals completely and a focus always persists which may become active under unfavorable circumstances. Spinal fusion tends to lessen the probability that such conditions will arise and it also tends to hasten the healing process. J. A. Key, M.D., Jour. Bone and Joint Surg., July, 1940.

A REPORT ON THE 1941 ANNUAL MEETING

The 1941 annual meeting of the Illinois State Medical Society was held at the Palmer House, Chicago, on May 20, 21, 22, and will go on record as one of the most successful meetings in the history of the Society. With this meeting the second century was begun, and it was indeed a most satisfactory beginning as the largest registration of all time was recorded.

All meetings were conducted in the spacious convention quarters of the Palmer House with 94 technical and 46 scientific exhibits on display there. The program this year was similar in arrangements to that of the 1940 Centennial Meeting held in Peoria with joint sessions each morning and individual section meetings during the afternoons. The Orations in Medicine and Surgery were scheduled as a separate session on Tuesday evening, May 20th, with John H. Musser of New Orleans presenting the Oration in Medicine and Owen H. Wangenstein of Minneapolis giving the Oration in Surgery. The attendance for this evening session was over 800, and taxed the facilities of the Grand Ballroom of the Palmer House.

With Dr. J. P. Simonds as Director of Scientific Exhibits the finest array of scientific material ever displayed at an annual meeting was shown in the Red Lacquer Room. The scientific exhibits attracted a great deal of attention and the room was well crowded during the entire meeting.

The technical exhibits were very popular also with hundreds of physicians present during the entire meeting. It was most remarkable that no complaints were registered by the exhibitors, and they were all more than pleased with the arrangements and the facilities made available for them.

The annual President's Dinner held on Wednesday evening in the Grand Ballroom, was one of the outstanding functions of the annual meeting. James H. Hutton, as immediate Past-President, acted as toastmaster, introducing all Past-Presidents who were present, then introducing L. E. Day, Chairman of the Council, who made the presentation of the President's Certificate to J. S. Templeton, President of the Society.

Colonel Paul G. Armstrong, State Director of

Selective Service, made a fine address in which he personally thanked the many hundreds of Illinois physicians who have been acting as examiners for local boards, members of medical advisory and appeal boards throughout the state. This was most interesting because Colonel Armstrong asked for permission to make this address to show his appreciation of the fine work of the medical profession in Illinois as a contribution to the program for national defense.

Hon. Hugh H. Clegg, Assistant Director, Federal Bureau of Investigation, Washington, D. C., gave an address on "The F.B.I. Program to Suppress Fifth Column Activities" which was most interesting and informative, and greatly appreciated by all present. Interesting stories of the work of this important governmental bureau were related to show the type of activities on their program.

Officers of the Illinois State Dental Society and the Illinois State Pharmaceutical Association were guests at the President's Dinner and during the evening telegrams extending the felicitations of adjoining state medical societies were received and read.

The large registration force was very busy throughout the meeting, and a tabulation of the registrations gave the following information:

- 3,134 members
- 357 internes and medical guests
- 68 medical students
- 286 auxiliary members
- 334 exhibitors

the total registration being 4,179, by far the largest ever recorded at an annual meeting in this state.

The House of Delegates held two meetings, Tuesday afternoon, and Thursday morning. All annual reports were published in the Handbook and mailed to members of the House before the meeting, giving adequate time for careful study. The reports were referred to the proper reference committees which held meetings, then submitted their reports which were acted upon at the meeting on Thursday morning.

At the close of the business session on Thursday morning, Charles H. Phifer, Chicago, was installed as President for the coming year by the retiring President, J. S. Templeton. E. H. Weld of Rockford was elected President-Elect; H. Prather Saunders, Chicago, was elected First

Vice-President; Fred H. Muller, Chicago was chosen Second Vice-President, and Harold M. Camp, Monmouth was elected as Secretary-Treasurer, these offices being combined by the House of Delegates.

The next annual meeting will be held in Springfield subject to the approval of the Council after the usual check-up on facilities has been made.

It was the unanimous opinion of all present that meetings in Chicago should be scheduled more often, and that nowhere in the United States can more successful meetings be conducted than in our second largest city.

Complete details of the meeting with the transactions of the House of Delegates will be published in the July, 1941 issue of the Illinois Medical Journal.

SOCIALIZED MEDICINE

From The Tribune, Hastings, Nebraska

One of the most treasured objectives of the parlor pinks who infest the nation is to sell the American people on the idea of socialized medicine.

Once put into effect, they claim, socialized medicine will put a bloom on every child's cheek and bring longer life to all. That it will also provide the politician with a strangle-hold on the medical profession and consequently on your health and welfare is something they fail to mention.

But forgetting the latter for the moment, what is the health experience of nations where bureaucratic control of medicine is in force? Such information is difficult to get because the totalitarian nations aren't releasing such statements these days.

However, we have run across statistics pertaining to the death rate from diphtheria in 1936 in Germany, England and the United States.

There were 11.5 deaths per each 100,000 population in Germany, 8.6 in England and only 1.5 in this country. In that connection, it is interesting to note that there is one qualified physician for each 767 people here as against one for each 1,069 in England, 1,307 in Germany and for each 1,569 in France.

In this country, the government doesn't tell young men and women whether they must be physicians or ditch-diggers. Opportunity for the individual depends upon himself, his ability and his circumstances. That is true of life in general and it is true of medicine.

The system works well. Why try to alter it?

Only the most rigid contagious disease technic provides a barrier and prevents the spread of tubercle bacilli from hospital patient to student nurse. J. A. Myers, M.D., et al, Annals Intern. Med., Nov. 1940.

MEDICAL ECONOMICS

H. M. Camp, M. D.
E. P. Coleman, M. D.
J. H. Hutton, M. D.
Ralph Peairs, M. D.
R. K. Packard, M. D.

Edited by the Committee on Medical Economics
of the
Illinois State Medical Society
E. S. Hamilton, M. D., Chairman
Kankakee, Illinois

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Address all letters and communications to the Chairman.

Attendance at the annual meeting of the Illinois State Medical Society called to the attention of the members some of the more important economic problems before the medical profession. Undoubtedly the rank and file of the profession displayed the most interest in the work being done in Selective Service. This is in part because so many of the medical profession are assisting in this work as patriotic service to their country without cost to the government. They are anxious to know how well their work is being done and to what degree their services are appreciated. Deeper than this is an interest in the future of their nation and the progress that is being made in preparation for defense of the nation, which at times seems most urgent. They were interested to hear the expressed appreciation of Colonel Armstrong for the work of the medical profession in Illinois and his opinion as to its high quality. The talk of Major Bier of Washington in the head office of the Medical Division of Selective Service gave data and information which explained some of the results attained so far in the examination of half a million selectees. Also he was most kind in his appreciation of the work of the medical profession thruout the entire United States. He realized the importance of the work they are doing and commented on the fact that they are donating their service.

The impression was created that there will be a further call for physicians in the armed forces of the United States, and while no definite number was mentioned it was urgently suggested that all men within the draft age seriously consider joining the Medical Reserve Corp, so that there will be an ever present well of medical men ready to aid in the upbuilding of an adequate army. While at present the admission of men above 40 is not encouraged, it was admitted that there was quite a probability that the age limit would be raised in the event that we actively entered into war and that most of the men so made eligible would probably be

placed in administrative stations. One left the meeting with the feeling that many more medical men would be needed in the coming few years and the hope was expressed frequently that the voluntary joining of the reserve would make any thought of drafting the medical profession unnecessary.

The President of the State Society, Dr. Charles Phifer, who has been intensely interested in the care of the indigent in Chicago the past eight years, presented a fine idea for the control of work in this ever increasing field of work, which now includes in addition to the indigent, the old age pensioners, the blind, and the widows. All of them are a difficult problem to the medical profession, who are desirous of extending to them the best attention possible, but do not feel they are being adequately compensated under the present rules and regulations, too often promulgated by non-medical men, who make the rules without either consulting with the medical profession, or without paying any attention to their advice, if they do consult. In addition there is a continuous attempt being made to extend so-called state medicine to include venereal, cancer, tuberculosis, crippled children etc. clinics in various parts of the state. To control these various agencies and to inform the members of the component county societies as to what is being done elsewhere, he proposed that a Committee be set up in the State Society to investigate all of these various problems and to serve in an advisory capacity to the rest of the state, thru a similar committee to be appointed in each county society to serve their local medical profession in the same manner that the state committee serves the entire state. Any information the state Committee has, would be forwarded to the local one, so that when any problem arose that came within this field, it would be referred to this committee, which would have time to investigate and a place to get all the information necessary in arriving at the proper decision as to the course to pursue. When

presented to the House of Delegates, Dr. Phifer's suggestion was adopted. The success of this method of handling the care of the needy will depend on the cooperation of the officers of the county societies, who must present it to their members and when and if adopted see that the proper committee is appointed from their members to do the work. Men of mature judgment and considerable experience are desirable, so that they can make the proper decisions without fear of criticism from either the medical profession or the laity. If we will carry this plan thru many of the new ideas pushed thru in the past years can be sidetracked to the mutual advantage of both the medical profession and the public.

The attendance at the annual meeting was the best in the history of the society. All those who attended were unanimous in the opinion that the medical profession of Chicago had outdone itself in preparation for the affair. The Palmer House made an ideal place to hold the meeting and the men downstate hope that Chicago will invite them again in the near future.

Next month this column will probably be under new management, as the present Chairman has taken on a new job. It is too early to announce the new Chairman of the Committee, but an effort will be made to obtain a much more capable one, who can both carry on the work of the retiring member as well as expand the field of usefulness of this Committee and the Column. Having attended it since its birth, the writer feels a little like its father, and he can assure his successor that he will always be interested in its work and will be willing to aid in any feeble manner that he may be requested. Again, I wish to thank all of you who have either assisted me by your efforts the past seven years or encouraged me by your expressed interest in the work we have been trying to do.

E. S. Hamilton, M.D., Chairman

UNQUALIFIED SUCCESS (Wall Street Journal)

A woman who had given a dinner party met her doctor on the street the following day.

"I am so sorry, doctor," she said, "that you were unable to come to my party last night. It would have done you good to be there —"

"It has already done me good," he broke in tersely. "I've just prescribed for three of your guests."

ILLINOIS STATE MEDICAL SOCIETY COMMITTEE ON MEDICAL BENEVOLENCE

The House of Delegates of the Illinois State Medical Society at its Annual Meeting held May 21-22-23, 1940, voted that certain changes be made in the Constitution and By-Laws to enable the Society to establish a Benevolent Fund for indigent physicians and their widows.

The plan adopted very closely resembles the one which has been operating in Pennsylvania for the past thirty-seven years.

We are publishing herewith the personnel of the Committee together with an outline of the purposes and the power given the Committee to carry on this work.

Committee on Medical Benevolence, John S. Nagel, Chairman, 185 N. Wabash, Chicago, Ill. Charles H. Hulick, Shelbyville; Clarence H. Boswell, Rockford.

PURPOSE OF THE COMMITTEE

1. To create a Benevolence Fund:
 - a. Through allocation of \$1.00 each year from dues of each member.
 - b. Through gratuities, endowments, etc.
 - c. Through the efforts of the Women's Auxiliary to the Illinois State Medical Society.
2. To investigate cases of alleged financial difficulties on the part of members, their widows or widowers.
3. When found worthy, to appropriate regular monthly benefits not to exceed \$25.00 to \$30.00 per month in any one case. When deemed advisable, may appropriate more over a short period of time when rehabilitation seems probable.
4. To designate the component society secretary in each county as the county chairman to submit applications for members for benefits, then to see that a questionnaire form is properly executed to give the desired information relative to the case. The councilor of the District may assist the Committee in submitting names of members, their widows or widowers, when he believes the individual is entitled to the benefits herein prescribed.
5. When it is the opinion of the Committee that the case is a worthy one and benefits should be allowed, the Chairman of the Committee

should notify the Secretary of the State Medical Society, stating the amount agreed upon as the regular allowance, stating the intervals at which the benefits shall be paid, so that proper vouchers may be submitted.

THE INVESTIGATIONS

When it is reported to the Committee that a member, widow or widower of a member is needy and unable to secure the necessities of life, a questionnaire form shall be submitted from the Secretary's office asking for the following information:

1. A brief social history of the applicant, past and present. Data concerning reasons for being in want whenever possible, and all other pertinent information which will enable the Committee to take the proper action.
2. A brief financial history including present assets and income, sources and amount.
3. Disbursing of present resources (rent, food, clothing, etc.).
4. Statements as to probable permanency of the present distress.
5. Any possible source of assistance such as:
 - a. Relatives
 - b. Friends
 - c. Fraternal Organizations
 - d. Insurance
 - e. Pensions
6. Have all sources of help been solicited?
7. Additional information. Means by which influence might be exerted to find employment or some other source of income. Is there a possibility of rehabilitation? (With moderate financial assistance over a short period of time, would it be possible for the applicant to become self-supporting?)

PROCEDURE

Requests from members, their widows or widowers for assistance, if submitted to the Secretary, shall be referred to the Committee promptly. At the same time a questionnaire form will be submitted to the applicant or to the county society secretary, or to the Councilor if the information is submitted by him. All possible information which will aid the Committee in determining the eligibility for assistance, the amount actually needed, or if rehabilitation

through short time payments is probable, should be submitted promptly.

Each case will receive the proper consideration by the entire committee which shall pass final judgment on:

1. Eligibility for aid.
2. The amount of aid.
3. Whether for a short time or permanently.

The decision of the Committee shall be final and there will be no higher authority within the Society to whom appeals from decisions of the Committee can be referred.

In the event that additional income is received and the individual is no longer eligible for further benefits, the county society secretary or the Councilor submitted the data, should notify the Committee of these facts promptly.

As soon as a reasonable amount is accumulated in the Benevolence Fund, only the income from the Fund shall be used to pay benefits.

The Medical Benevolence Fund shall be subject to an annual audit as are other funds of the Illinois State Medical Society, although merely the amount of the Fund, the payments made during the year, the additions to the Fund, and the interest from investments shall be mentioned. The names of beneficiaries shall not appear in the annual audit, nor shall they be mentioned in the annual report of the Committee to the House of Delegates.

The Secretary of the State Medical Society shall maintain a separate file for all correspondence relative to beneficiaries, amounts paid, investigations and minutes of meetings of the Committee, which shall be a closed file and not open to inspection by others than members of the Committee, the Auditor, or a regularly designated Committee of the House of Delegates.

As the regular vouchers of the Illinois State Medical Society are paid through the State Bank and Trust Company of Evanston, all funds for benevolence purposes shall be maintained in another bank and payments for benevolence purposes shall constitute the only vouchers drawn on these funds. The council of the Illinois State Medical Society has allocated the sum of \$5,000.00 maintained in the National Bank of Monmouth for several years as a Certificate of Deposit, as the nucleus for the Benevolence Fund, and payments shall be made from this fund on this bank.

NOTE: The above report and procedure was

presented to the Council of the Illinois State Medical Society in regular session on August 4, 1940, by the Chairman of the Committee on Medical Benevolence. The report and procedure were approved, and the Committee instructed to make the necessary arrangements to function immediately. The Council was authorized by the House of Delegates at the 1940 annual meeting to approve a method of procedure so that the work could be started with a minimum amount of delay.

TB PATIENTS UNDER POLICE GUARD —
LAW IS INVOKED

Under police guard, 26 men and 10 women are being treated for tuberculosis in a wing of the Philadelphia Hospital for Contagious Diseases. There is a policeman standing at the door day and night to see that they do not run away from the city's beneficence. These patients are being subjected to compulsory hospitalization under a 30-year-old state law, which for the first time is being invoked in the city's war on tuberculosis. They were "sentenced" to treatment at the hospital by Judge Charles L. Brown of the Municipal Court. The complainant was the division of tuberculosis of the city department of health.

In each case an agent of the division testified that the defendant repeatedly disobeyed orders to place himself under medical supervision and observe certain hygienic safeguards.—*The NTA Bulletin*, March, 1941.

NEW WRINKLE

Group insurance is now being written, according to the current issue of *Business Week*, for the trucking company members of a large Chicago motor freight association. The policy covers hospital expense, surgical fees, sickness, and accidents. This represents a new wrinkle in commercial group insurance. The insurance company agrees to write the insurance at group rates below individual rates for comparable coverage. The employee makes his own decision about buying, but if he decides in favor of insurance he gets his own policy and tells his employer to take the premium out of his pay. Other loosely knit groups of individuals such as drug store chains, the retail hardware association, and the American Institute of Decorators are also arranging for similar group policies for employees of members, even when the individual member-employer operates only a small business with a limited group of employees. The development of commercial insurance plans to cover hospital expense and surgical fees has obviously only begun but may reach proportions that will completely eclipse nonprofit community experiments in sickness insurance of this type.—*Minnesota Medicine*.

Correspondence

POSTGRADUATE COURSES IN OBSTETRICS
AND PEDIATRICS TO BE REPEATED
AT THE UNIVERSITY OF ILLINOIS,
COLLEGE OF MEDICINE

The Departments of Obstetrics and Pediatrics of the University of Illinois cooperating with the staffs of the medical schools of Chicago and the State Department of Public Health, will again offer to physicians of Illinois an intensive one week's course in obstetrics and pediatrics at the Research and Educational Hospitals. The course begins each Monday morning at nine o'clock and ends at five o'clock Friday evening with the liberty to attend dispensaries of choice or visit other institutions on Saturday. The courses will be given for only four weeks, starting June 16th and 23rd and July 7th and 14th. Staff members of all Chicago Medical Colleges are participating in giving the course and will include such Obstetricians and Pediatricians as Doctor W. C. Danforth, F. H. Falls, Joseph Baer, W. H. Browne, H. C. Hesseltine, W. J. Dieckmann, Charles Newberger, Julius Hess, H. G. Poncher, Stanley Gibson, J. A. Bigler, D. N. Buchanan, Arthur Parmelee and Herbert Schmitz. Opportunity is given for individual consultation work with many of these men.

The registration fee of \$10.00 is the only fee required. Application should be accompanied by the registration fee and should be sent to Mr. G. R. Moon, 1853 West Polk Street, Chicago, Illinois.

APPLICATION BLANK

Name Age
Date of Graduation
Street Address
City
Member of County Medical Society
Yes No
1st choice — week of
Do you wish a room reserved for you at the
YMCA?
2nd choice — week of
Is your wife accompanying you?
3rd choice — week of
Excellent living accommodations can be obtained at the nearby students' Y.M.C.A. at reasonable rates. Fee \$10.00 — Make checks payable to University of Illinois, College of Medicine.
Mail application to G. R. Moon, Registrar, 1853 West Polk St., Chicago, Illinois.

Better dietary habits especially during the past twenty years, have enhanced inborn resistance to all diseases including tuberculosis. Fred H. Heise, M.D., *Amer. Rev. of Tuberc.*, Feb. 1941.

PHYSICIAN DECLARES PTOMAINES IN FOOD DO NOT CAUSE ILLNESS

"Ptomaine poisoning doesn't exist," Dr. Dorothy V. Whipple, Washington, D. C., declares in *Hygeia, the Health Magazine*. She explains that illness caused by eating food that is not wholesome is not due to the presence of ptomaines in the food and should more accurately be termed food poisoning than ptomaine poisoning.

"Ptomaine," the physician continues, "is a word for substances which form in decomposing foods. There are many different compounds which come under the general term 'ptomaines,' but they all have in common the property of being made by bacteria out of decomposing protein. Some of the ptomaines have distinct odors and tastes, which are largely responsible for the characteristic flavor of putrid food. . . However — unbelievable as it may seem to many people — the ptomaines in such food, even when the food is eaten in large quantities, produce no ill effects in the human body."

Doctor Whipple lists as the cause of food poisoning: (1) The food eaten may itself be naturally poisonous; (2) bacteria may have made poisonous substances in once wholesome food; (3) chemical poisons may have been accidentally introduced into the food; or (4) bacteria may have been allowed to grow in the food.

Regarding the first cause of food poisoning, Doctor Whipple states, there are poisons from the plant world that are mistaken, though rarely, for similar-appearing edible substances. Some are poisonous at all times, . . . others are poisonous only at certain times of the year. . . . Poisons exist in animal foods as well as in plants. . . . Food poisoning, due to naturally occurring poisons such as these, occurs, but the number of cases of such poisoning in the United States is small."

A more severe type of poisoning is that produced by bacteria growing in the food. This poisoning is known as botulism, since it is caused by *Clostridium botulinus* (rod-like bacteria which form a toxin). "These bacteria do no harm," Doctor Whipple declares, "but when they are allowed to grow in food for a period of time they elaborate a poison which is harmful to human beings. . . . The poison affects the central nervous system. . . . Botulism is a serious disease. In some epidemics, as high as 100 per cent of those attacked died; seldom is the fatality less than 50 per cent."

In regard to chemical poisons in food, Doctor Whipple says: "Many substances can get into food, either accidentally or intentionally, and if in sufficient concentration will cause illness. Among the more frequent of these substances are lead, arsenic, cyanide, and some of the alkaloid poisons. If a large amount of any one of these substances is taken, the immediate illness is usually characterized by nausea and vomiting. . . . If only small amounts of these poisons are taken, no symptoms will develop unless the small amounts are repeated frequently over a period of time. In such cases signs and symptoms of chronic poisoning may develop."

In reference to the frequency of such illness, the doctor states that "a long list of harmful substances have at one time or another been found in food, but such contamination is now relatively infrequent."

The most frequent source of food poisoning, according to the author, is the growth of bacteria in food. She says, "Occasionally bacteria producing disease are introduced into food. Many bacteria find food a suitable place in which to grow, so that a few organisms accidentally dropped into food may become many thousands by the time the food is eaten. The germs which cause the illness, correctly spoken of as food poisoning or food infection, belong to two types. One is the salmonella group of organisms. The other is the staphylococcus group of organisms and is most frequently found in milk products. Meat, fish, and poultry are the foods most frequently infected by the salmonella group of organisms. The animal may have been infected before it was killed, or its flesh may become infected afterward."

Doctor Whipple says that any food that is handled a great deal is more apt to be harmful than food eaten without such handling, but she adds, "If infected food is thoroughly cooked, all harmful bacteria will be killed and the food can be eaten with impunity."

The physician concludes with the warning, "Foods likely to be confused with poisonous varieties should not be used unless complete dependence can be placed on the knowledge of those gathering the food."

"Clean, fresh food presents few hazards, but stored foods, preserved foods, foods delayed between producer and consumer are those in which constant vigilance is necessary to avoid contamination. Meats should be taken from healthy animals, cut up and handled in a careful manner by butchers free from disease; bakery goods should be prepared by healthy bakers in clean kitchens. Food must be guarded in transportation and sold in markets and shops in such a way as to be protected from flies, rats, dust, and unnecessary human handling. The health of food handlers must be carefully guarded and the sanitary condition of eating places must be maintained by frequent inspection by authorized agents. The danger of eating at roadside stands, or improvised eating places where even a casual glance indicates that sanitary facilities are not adequate for health protection, cannot be overemphasized."

HOPE IT WAS A SOFT HAT

Mike had just been operated on and was placed in a ward between two other boys from the Emerald Isle. After he had come out of the ether and was still sort of woozy, the Irishman on one side yelled over to the third one saying, "Pat, how was your operation?" Pat replied, "Sure, they forgot to remove the sponge from me and they had to reoperate and take out the sponge. And how is yours, Jim?" To which Jim replied, "They forgot the scissors in me. They had to reoperate and take out the scissors."

About that time Mike's doctor stuck his head in the door and hollered, "Anybody see my hat?" and Mike fainted.—*Davis Nursing Survey*.

Original Articles

ORGANIZATION AND MEDICINE

JAMES SCOTT TEMPLETON, M.D.*

PINCKNEYVILLE, ILLINOIS

Organization is distinctly the work of man, a mark of distinction that places man in a class to himself.

Beasts, fowls or fish never organize but gather in herds, flocks or schools. They mate, produce and protect their offspring as best they can but do so in a feeble way.

It is given only to men to organize to provide for protection, hunger or future wants of their offspring. The parent bears will cooperate to protect their cubs but fail to interest others of their kind in opposition to a common enemy.

From the days of the Garden of Eden, man has been organizing, sometimes successfully, other times failing to succeed. Some might question the statement that monkeys do not organize and that man's efforts of the early age accomplished but little more than bands of monkeys. To me, there is a wide difference. Men, from their beginning, laid up sinews of war, went into conflicts with a definite purpose and fought for what they considered a principle as well as for protection.

One of the best examples of organization of early days was that of Moses, who commanded and led the children of Israel out of the wilderness. For forty years the twelve tribes, through all kinds of tribulations, kept faith and accomplished their goal. They had a purpose and were faithful. What happened after they succeeded? They became selfish, quarreled and thus broke up their organization. Mind you, it was not opposition from without, but hate, envy and bickerings from within that broke up what could have been one of the greatest organizations of all time.

Later in history, we find organizations serving mankind in two of the greatest cities of the world, Rome and Athens. Many times they were conquered and almost demolished by the Barbarians, yet, despite their apparent destruction, sparks of culture survived. Ideals of the family home life were not all quenched and in time Rome and Athens would return to their former

splendor. Looking back over the hundreds of years that these cities survived, regardless of the enemies about them, it will be noted that their most destructive enemies were those who grew up within their own gates. Their foundations were undermined by their own progeny, youths growing up seeking their own pleasures, forgetting the sound principles that had sustained and rejuvenated their organization through many dark, dismal seasons. Family life was not cherished, slavery became popular and many other things flourished that cast gloom and sorrow over the once prosperous and happy municipalities. Not only were Italy and Greece benefited by these cities, but other nations of the world profited. In fact, all the good things known to medicine during those early centuries were many times crushed and apparently forgotten. But the smoldering spark would rekindle and, through the influence of organization, not only prevailed in these great cities and surrounding country sides, but were passed along to the new born municipalities. The principles of Hippocrates and of many other men of hundreds of years ago who believed in organization on a sound, enduring basis, kept the ideals we now cherish and cultivate, from being crushed and buried from the face of the earth. Emigration from these great cities carried the idea of organization to Spain. Nurtured there, the idea of finding a near way to the West Indies was born. Organization again came to the front and resulted in the discovery of America by Christopher Columbus. The beginning of a new map of the World.

Countless efforts were made to colonize the New World before a successful organization was accomplished. One company after another came and returned or disappeared entirely. Colonies similar to the one which landed at Plymouth Rock were organized and united to form one of the greatest organizations ever known on the face of the earth, THE UNITED STATES OF AMERICA.

The liberty enjoyed by our citizens is known the world over. If we should extend the hand of hospitality to the oppressed of the world, our ports would be flooded with immigrants. We need have but one fear. Our organization is too great, our citizens too loyal as matters stand today, to fear the barbarian attacks of other nations, but we must look to and fight the

*President's address, 101st Annual Meeting, Chicago, May 20-22, 1941.

enemies that would, if allowed, grow up in our midst. Insidiously and stealthily they would attack the vitals of our organization from within.

The first thought of this great organization is liberty, — liberty to organize for the protection of our homes — our families, our ideals of personal life, including our religious beliefs, our mode of worship — in fact, our every day way of living so long as it does not interfere with the privileges of others or tend to lower the standards of life among our people. It is to be regretted that in many cases organization is necessary and not all organizations are helpful, yet, the history of the world bears us out in that much can be done by organization if such is founded upon the sound principles of integrity, kindness and respect for the rights of our fellow men.

We have cast aside many of the habits, customs and beliefs of our pioneer life. We have changed our way of living to conform to the demands of improved civilization. Our way of travel, our educational systems and even our mode and manner of worship are not as they once were. Yet with all these changes we have retained our liberty of thought, the sanctity of our homes and free speech. We may protect our homes and families from all evil that is visible, yet we must be on the alert for the invisible that creeps into our homes unrecognized. We must not allow the foundation of our family home life to be destroyed. This is the bulwark of our liberty-loving nation.

Among other vital things that have arisen in our land of liberty is the family doctor. From the beginning of our organized nation, our people have come more and more to love, believe and rely upon their family physicians, who are parts of a great organization, an organization now almost one hundred years old. Efforts were made previous to eighteen hundred and forty-seven to form an organization but they were unsuccessful. Illinois and other States were already organized and were of great help when the American Medical Association was organized.

Previous to 1847, many great discoveries in medicine had been made, but for lack of general support the American people had not been receiving the full benefits of the efforts and accomplishments of the men who had spent days and nights at their desks in study and work. No man had worked harder than the laboratory man,

the technician and the chemist and others who devoted their time and lives to experiments, all of which were for the benefit of humanity.

Jenner discovered vaccination for smallpox in 1788 and we learn from history that Admiral Berkeley made the statement in "The House of Commons" in 1802, fourteen years after Jenner had made his discovery that in the United Kingdom, 45,000 persons die annually of smallpox. The French Minister of the Interior said in 1911 that it is estimated that 150,000 people die annually in France of smallpox. Here was a lapse of over twenty years between the discovery of vaccine and the realization that something must be done to reduce the number of cases of smallpox in these countries. The medical profession was not organized.

The first use of general anesthesia by nitrous oxide was in the year 1800, but it was forty years before its usefulness was appreciated. Dr. Oliver Wendell Holmes and other organizers brought about its use in Obstetrics and Surgery. It was but a short time until its general use was relieving the sufferings of millions of the afflicted. Without the general use of anesthetics, dentists, surgeons or any other specialists would be helpless. We now have no fear of chloroform, nitrous oxide or ether.

In 1847, the greatest hazard of childbirth was brought under control. Semmelweis demonstrated the contagiousness of puerperal fever. Organized medicine accepted his teaching and the lives of countless mothers have been saved to rear families. Also, organized medicine accepted the principles discovered and taught by Lister and Pasteur. Their adoption revolutionized medicine and surgery. Their ideas are foremost in the minds of every successful physician and surgeon today. The prevention of disease both in medical practice and sanitation has been brought to our present high state of efficiency by the acceptance of these by the medical profession.

The innovation of trained nursing by Florence Nightingale, which shortly followed the organization of medicine, was one of the most practical advances ever made. It brought about the teaching of nurses. The value of the nurse to the sick patient both in comfort and aid to recovery is inexpressible. They are now an indispensable part of the great work of the medical profession in relieving the ills of humanity. We find them in the home, the hospital, the school, the factory,

in the Army and in fact, everywhere that sickness or suffering prevail.

Medicine and surgery have been but a part of organized medical aims and conquests since 1847. Their work in sanitation, immunization and prophylaxis have probably spared more lives and contributed more to the peace and happiness of mankind than any other group of the professions.

Physicians are now living who remember how whole families of children, before the days of immunization, were taken from the home by diphtheria. The so called "membraneous group" frequently claimed its victims, — but only a form of diphtheria. Father and mother lived in constant fear of this commonly fatal disease. Organized medicine lost but little time with the program of immunity and of late years we have seen but little of this throat disease.

The immunization of the young against typhoid or enteric fever was seized upon by the medical profession and no time lost in saving the lives of many of the youth of this and other lands.

Sanitation approved and directed by organized medicine has not only saved millions of lives but has contributed to the pleasure and happiness of the nations of the world.

Prophylaxis has done much to produce contentment, secure health and prolong life. This is one of the basic principles of medicine which has not been overlooked.

Organized medicine today is not making any apologies. We have invested the talent intrusted to us a century ago and it has increased more than a hundred fold in life, health and happiness for the American family.

The work of the scientist has been greatly appreciated. His findings have been immediately investigated and if found not useful are discarded. If approved, they are passed on to the profession in general and are used for suffering humanity in every walk of life.

Those who have practiced medicine during the last forty or fifty years, realize more than any others, the great change that has come to pass in the medical profession. We briefly call to your attention the difference in maternal care. More than half of the expectant mothers of the early days had no medical care. They consulted their neighbor who had borne children and were given

all kinds of advice, some good but some not scientific.

Present day maternal care includes constant medical supervision for all pregnant women. Every possible opportunity is given for the proper development of the child and for the safety of the mother. The new born babe is given the care which medical science has provided. Few are born in America who do not receive some of the advantages of modern treatment. More than one hundred thousand physicians are studying, practicing and teaching modern methods of bringing up children to preserve their health and giving them the opportunity of reaching maturity.

Our youth is not neglected. We are studying its problems and comparing methods of the past with present day teachings and advising it as best we can.

Late youth and middle life should require but little medical care. However, when needed, the medical profession of America is prepared to give them the best of modern treatment.

As one approaches the age of retirement, there is a greater need for medical care. The heart, the arteries and the kidneys are watched. Modern medicine has done much to relieve the suffering caused by the decline in the functioning of these organs.

Organized medicine is modern medicine. In olden times, when an epidemic broke out, it usually ran its course and hundreds would die in a day. According to records, there were so many dead in some cities, that they could not give the bodies a decent burial. Today, if an epidemic threatens, the whole profession becomes interested. The recent threatened epidemic of sleeping sickness in St. Louis is a good example. Modern Medical science was brought into use without delay, and the scourge brought to an end promptly.

Organized medicine has met every emergency decisively, either in time of war or in time of peace. Services running into millions of dollars are now being donated by the profession for our National work of preparedness.

It was similar in 1918. Millions of dollars in service were donated and volunteers for the Army were forth-coming until there was no lack of physicians for the boys in service.

In Illinois, the profession has served the Relief load on a fifty per cent basis, again do-

nating millions of dollars that all may have the necessary medical care.

Regardless of these facts, from the Christian Century of April 30, 1941, I quote:—"Today, about three-fourths of our people fail to get the medical care which they should, while nine out of ten receive inadequate dental care." Further, in the same article, it is explained that this is because groups of organized medicine fight national readjustment. It is not the medical profession that is fighting national readjustment. It is national readjustment which organized medicine wants.

Organized medicine is now studying many schemes for the readjustment of medical service and none of them are tainted with job holders' ideas.

We recognize the changing conditions of our times. We realize that some aspects of medical service must be changed. The question arises, "Who is the more capable of making the proper changes, the medical profession or those who have a job which is at stake and whose incomes are controlled by politics?"

The majority and controlling force of the American Medical Association is the family doctor. He knows the financial condition of practically every home. He knows the needs of the children and does not believe that three-fourths of them are in need of medical care which they do not receive.

Legislation, if needed, should come after the medical profession, the guardian of the American home, to find places to help and adjust medical service to the needs of our people.

Many physicians, and organized medicine as well, are fully aware that our greatest problem today is to find plans whereby the poor, the middle class and the rich may each receive adequate medical care.

We are not responsible for those who spend their income frivolously, but we are responsible for those who toil and save for a rainy day. Our charges should be fair and our service should be prompt and high-class.

Organized medicine has done its duty these many years and I cannot see that it is going to shirk its duty now. We stand for a high class preparatory education, a high grade medical education and the best of hospital service. We require that only men of good character form our organization. We require service to humanity.

We have the knowledge, the equipment and the skilled professional staff to give the people all the medical care they need. If they do their part, results will be forthcoming.

We are now giving the American people the best medical service in the world. *Let us continue and fear not.*

MENSTRUAL DISORDERS DURING THE ADOLESCENT PERIOD

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It is important to realize that the pre-pubertal, pubertal, and adolescent periods are somewhat inseparable because of their gradual and uneventful transition from one to the other. The adolescent phase refers to the transitional period between puberty and maturity. It is seen that the early pubertal phase and adolescent period can overlap and are not accurately determined.

The pre-pubertal period is often one of great activity in breast enlargement and genital development, which includes the external genitals and the uterus. There is marked development of hair in the axilla and about the external genitalia. There are changes in physical contour and mental state. These changes may be marked and produce profound mental and physical discomfort. I mention these changes merely to show that the ushering in of the menses is only one physiological manifestation of puberty.

At puberty, exaggerated growth in hair and breasts, abnormal increase of body weight, and menstrual irregularities may cause the adolescent girl no little emotional and physical upset.

Indeed, it is significant that many girls who have abnormalities in the pre-pubertal and pubertal periods may develop menstrual disorders in the adolescent period. In short, it may be said, the same physiological endocrine forces at work, which produce normally the secondary sex characters, changes in body contour, and initiate the menses, if acting abnormally, may carry through and produce disorders of menstruation in the adolescent period.

In the Northern parts of the United States, the onset of menses occurs between 12 and 15 years of age. The average is 14, and of course,

healthy girls occasionally begin menstruating before 12 and after 15.

Amenorrhea. Amenorrhea is not an uncommon disorder during the adolescent period. As to the etiology of amenorrhea, physiologists generally agree that menstrual function depends upon the presence of a normally functioning anterior pituitary gland, a normally developed ovary capable of responding to the anterior pituitary gonadotropic hormones and a normal uterus which responds to the stimulation of the ovarian hormones, estrin and progesterin.

It is obvious that unfavorable conditions arising during the pubertal period which adversely affect the anterior pituitary gland may affect the appearance of the menses.

It has been further shown that pituitary gland stimulation to the ovaries, in turn initiating the menses, may be altered by a dysfunction of the thyroid, adrenals and pancreas and other ductless glands which disturb the vital metabolic processes. Further etiological factors of amenorrhea should concern constitutional and general diseases of childhood and diet regulation. In Germany it has been shown that an undernourishment of a large section of the female populace was followed by a widespread epidemic of amenorrhea. It has been definitely shown in the experimental animal that the ovary is sensitive to nutritional disturbances.

A study of these cases should entail a thorough history and a detailed physical examination, and such laboratory examinations as a basal metabolic rate determination; sugar tolerance tests; mapping of visual fields, and x-ray of sella turcica to show the size of the pituitary gland and to map out a tumor; blood and urine hormone studies; endometrial biopsies; and vaginal smear studies. In addition, it may be imperative to make a pelvic examination under anesthesia, if necessity demands, to establish the physical status of the pelvic organs.

To be sure, many of you do not have access to all these laboratory procedures but many of these procedures can be carried out by you. Many of you do have access to a competent gynecologist or pathologist experienced in endocrine work, who can help you in your studies.

The treatment of amenorrhea entails an attack upon the underlying cause found in an exhaustive study of the patient. The remedial measures should not entail dangers to gonadal

function. Developmental defects should be corrected. All systemic and constitutional diseases should be eradicated. Diet regulation in the direction of a high caloric, well balanced, rich vitamin content, is paramount. The adolescent may develop an unhealthy mental status which should be corrected. In the obese, a gradual weight loss should be effected by restricted diet, exercise, and in some instances, a well regulated thyroid therapy. While in the underweight, a high caloric, nourishing diet, rich in vitamin content, is indicated.

Interestingly enough, the endocrine treatment is one of the most important. The average age of the onset of menstruation is 14 years. Not a few healthy girls with seemingly good pre-pubertal development begin menstruating after 15 years of age. It is in this group in which the history, physical examination, and laboratory aids add nothing significant, and the endocrine background appears normal, that hasty endocrine treatment is to be condemned. However, if the patient presents general underdevelopment and hypogonadism with amenorrhea, and the age is significant, then, endocrine treatment may be indicated.

Several therapeutic endocrine agents can be used:

1. *The use of thyroid extract* is seemingly indicated in hypothyroidism. The severity of the hypothyroidism may be checked not only by a basal metabolic rate determination but by cholesterol determinations. Many physicians feel that thyroid should be given empirically.

2. *The use of an estrogenic preparation* is a substitutional therapy, acting locally on the endometrium, thereby producing bleeding. The estrogens, such as theelin, amniotin, etc., have no effect upon the ovaries and probably depress the pituitary gland activity, as has been shown by animal experimentation. However, experience has shown that there are a certain number of cases in which estrogenic therapy has been beneficial. Possibly a quantitative estrogenic balance is set up in a patient with an estrogenic deficiency, which trips off the anterior pituitary response, which in turn activates the ovaries. The estrogenic substance does affect genital development.

3. *The administration of the gonadotropic substances* would seem to be the ideal treatment, certainly in those cases due to pituitary hypo-

function. I have had considerable experience with several gonadotropic preparations. Prephysin, which is made from horse pituitary, is available in two concentrations, 25 or 100 units per cc., distributed by the Harvey Company. The disadvantage of prephysin is that it usually causes inflammatory reaction due to the foreign proteins present. Armour and Ayerst, McKenna and Harris Laboratories put out dependable products. The gonadotropic principal in pregnant mare serum concentrate can be recommended in two preparations: Gonadogen by the Upjohn Laboratory is dispensed in dry tablets in sterile vials, with saline for solution at the time of injection. Gonadin from the Cutter Laboratory is an aqueous solution and must be refrigerated when not in use.

In short, it may be said that pituitary inadequacy may be substituted for by gonadotropic substances obtained from animal pituitary or the serum of pregnant mares. Hypodermic injections of these extracts are advised in series of 5 to 15 doses during the first two weeks of the menstrual cycle, beginning at the onset of the period, or at intervals beginning not oftener than every four weeks, to attempt re-establishment of cyclic flowing. Results are not achieved until several series have been administered. The dose must be individualized. Some patients are given 25 units of prephysin daily and respond, others need a higher build-up. Gonadogen must be individualized as to dosage also; some cases are started with 10 unit doses, others demand 20 units per dose, and as much as 300 units per cycle of therapy. Pregnandiol 24 hour urine specimens over a period of seven days, and vaginal smear studies may determine the justification for further treatment and the ability of the ovaries to respond.

4. *The anterior pituitary-like substances* or the concentrates of pregnancy urine are condemned in this treatment because they do not stimulate follicular activity, but there is every reason to believe that they cause follicular atresia with resulting partial or temporary castration.

Radiation to stimulate the pituitary is a distinctly hazardous procedure as it may remove the last vestige of function.

Curettage offers little hope as a therapeutic measure, but may help in establishing an index of function. Strenuous curettage should be

avoided because of the already too scant endometrium.

Functional Bleeding. The functional bleeding in an adolescent girl may or may not present a serious problem. Doubtless, it is anovulatory type of bleeding. The failure of ovulation results in persistent, active, unruptured follicles, which may cause a build-up or a hyperplasia of the endometrium. It may be said, as I have pointed out in previous papers, that bleeding and the pattern of the endometrium can not be correlated. I have observed the endometrium, atrophic or castrate appearing, in case of severe bleeding, while, in other cases of bleeding the follicular and secretory phases are present and the endometrium appears normal. Vascular phenomena and muscular insufficiency are always considerations in the etiology of functional bleeding. A quantitative imbalance between the ovarian hormones and the pituitary gland response has yet to be settled.

I have consoled many a mother, who has brought her adolescent daughter to me because of irregular menses and bleeding. I do a complete physical examination with the necessary laboratory aids preceded by a very thorough and detailed history of the case. If I find in my examination no constitutional disorders, a normal pelvic examination, a blood count showing no serious blood loss, I can then make a reasonable promise to the mother that her daughter will probably make a normal adjustment, and can reassure the little girl. However, blood counts should be taken at short intervals to determine the blood loss. Inasmuch as the bleeding is in most instances anovulatory, as soon as ovulation establishes itself, menstrual regularity in rhythm and amount takes place.

It must not be forgotten that menstrual irregularities as to rhythm and amount are not uncommon during the adolescent period and that conservatism and a "hands off" policy is the treatment of choice. Blood loss will determine active treatment. However, some observers feel that in the failure of ovulation, treatment by the gonadotropic substance should be started at once.

There are several types of endocrine treatment for us to consider in functional bleeding during the adolescent period:

1. *The gonadotropic substances* are certainly indicated, because they initiate ovulation. I have already mentioned the gonadotropic substances

as to method of treatment, and there are no changes in this instance. I can confirm by an extensive experience that these substances are useful.

2. *Progesterone preparations* in 1 to 5 rabbit unit doses give variable results, but should be tried. It has been shown that as high as 100 units may be necessary to luteinize a proliferative endometrium; on the other hand, it is known, in spite of the above statement, that splendid results may be obtained with much smaller doses.

3. *The anterior pituitary-like substances* are not recommended because of follicular atresia. I am well aware of the fact that it does lessen bleeding in some instances. However, it is not by ovarian luteinization and progesterone effect that the chorionic hormone preparations work. The daily dose as usually given is anywhere up to 500 units or even higher during the bleeding period. Perhaps the bleeding is stopped by partial castration.

4. *Testosterone* in the form of the propionate is becoming a popular treatment and has produced results. It has characteristics similar to progesterone in that it may have an inhibitory effect upon the proliferate activity of the endometrium, normally characterizing the follicular phase of the cycle. It is usually given in 10 to 25 mg. doses twice a week. Hirsutism and masculinization of the patient by this preparation should make one cautious during the treatment.

Curettage of the uterus may be imperative in some cases to stop blood loss and may tide the case over a considerable period of time until other treatments may become effective.

Radiotherapy may be a treatment in desperation and is certainly radical. On the other hand, every available agent may be exhausted in the control of serious bleeding.

Rest, a high caloric nourishing diet rich in vitamins, and the elimination of all constitutional factors are of prime importance.

It must be remembered that these little girls sometimes develop an emotional and psychic upset, which should be eradicated and the patient reassured and restored to a happy mental state.

Primary Dysmenorrhea. Primary dysmenorrhea is a very important functional disorder of the adolescent period. It has been pointed out that the great majority of dysmenorrhea cases do not begin at the time of puberty but often a

considerable time later. One observer points out that it is a disease of the ovulating girl and does not occur as frequently in the girl with the anovulatory type of cycle; one rarely observes dysmenorrhea in the functional bleeding of the adolescent girl; an imbalance between the two hormones seems much more important than a domination of estrogen alone; and in the same way one rarely finds the complaint of pain in the menopausal bleeder.

Primary dysmenorrhea may have various other causes and a detailed history and thorough physical examination with the necessary laboratory aids are indicated. An examination under anesthesia of the pelvic organs may be indicated.

Developmental defects should be detected; constitutional factors should be eliminated; and psychogenic phases should be observed.

In the treatment of dysmenorrhea, rest, hygiene, constitutional factors and diet should be given no little importance, and developmental defects should be corrected.

The use of progesterone as an endocrine treatment is indicated in that the estrogenic substance stimulates muscle contraction and initiates spasm, while progesterone inhibits muscle contraction and is anti-spasmodic. The progesterone is given in daily doses a few days or a week preceding the menstrual period and must be individualized as to dosage.

Testosterone propionate has been used in the treatment of this complication based upon depressing estrogenic effect through the anterior pituitary. Evidence seems to indicate it inhibits follicle ripening. A dose of 10 mg. is given intramuscularly twice or three times a week throughout the cycle.

The pregnancy urine preparations or the anterior-pituitary-like substances have been used for a week preceding the onset of the period. Once again, I condemn the use of these substances, because they produce follicular atresia.

Thyroid gland extracts in small doses and properly controlled have been effective in this complication.

A careful dilatation of the cervix may produce beneficial results in some instances.

Another distressing disturbance during adolescence is hirsutism which may date to puberty or adolescence. The investigation as to its cause should be directed toward determining whether

the adrenals or the pituitary gland is at fault and treatment carried out accordingly.

SUMMARY

1. A thorough history, a complete physical examination, and extended laboratory aids are necessary in diagnosing and treating the menstrual dysfunctions of adolescence.

2. Menstrual irregularities in the adolescent period are manifestly associated with and related to conditions arising in both the pre-pubertal and pubertal periods.

3. Primary amenorrhea in a healthy girl with good pre-pubertal development may delay active treatment. However, primary amenorrhea with faulty pre-pubertal development may finally indicate active treatment. Age may be a determining factor.

4. Functional bleeding during the adolescent period usually corrects itself and only excessive blood loss should indicate active treatment. There is usually a failure of ovulation. The gonadotropic substances are certainly indicated as a method of treatment in this complication because they initiate ovulation, and there are those who feel that treatment should be started immediately.

5. Dysmenorrhea may be treated from the endocrine standpoint, but other factors must not be overlooked.

6. The thyroid gland extracts should not be forgotten in menstrual irregularities, even though the treatment may be empirical. This statement holds true in amenorrhea, functional bleeding and dysmenorrhea. The thyroid dosage should be guarded and controlled in part by basal metabolic rate determinations.

7. The anterior pituitary-like substances should be used with distinct caution because of their tendency to produce follicular atresia.

8. Caution should be exercised in the use of testosterone propionate because of the tendency to hirsutism and masculinization.

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DISCUSSION

Dr. Edward Allen, Chicago: I would like to express my appreciation to the Section on Pediatrics for this opportunity to discuss Dr. Campbell's excellent paper.

I have been interested for some time in these problems of the adolescent girl because I have felt, as the Chairman just expressed it, that the period be-

tween pediatric care and when the gynecologist receives the patient, has been a badly neglected one. I quite agree with the Chairman that it would be wise for the pediatrician to extend his care upward and the gynecologist downward so that this may become a cooperative effort.

There is much to be learned concerning the problems encountered in the adolescent youngster. These problems have in the past been somewhat neglected due largely, I think, to both lay and medical prejudices concerning the problems of the adolescent girl. We see no more reason why complete examinations of the little girl's pelvis should not be done than of her old sister. It is high time that we rid ourselves of the sanctity of the intact hymen in matters of health. Adequate examination can be conducted in the vast majority of cases by recto-abdominal examination combined with visualization through a vaginal speculum or vaginoscope. If anatomic conditions make this impossible we feel that they may interfere with an adequate drainage and discharge of menstrual blood and in later life proper sexual relations. They should be corrected.

Probably due to the fact that we have not had the opportunity of close clinical contact with endocrinologists of note as Dr. Campbell has, our results of hormone therapy have not been satisfactory as Dr. Campbell reports. We believe that many of these conditions, such as Dr. Campbell mentions, of amenorrhea, dysmenorrhea, and even some of the functional bleedings, might be avoided by proper early examination and therapy. The most satisfactory procedures in the treatment of these conditions have been the time honored ones of proper hygiene, rest, and reduction or increase in body weight, vitamins and adequate minerals. Thyroid therapy we feel should not be denied a patient on the basis of a normal metabolic rate or even a slightly elevated metabolic rate. Many of our cases of functional bleeding have responded only when the margin of over-dosage with thyroid has been reached.

We have not had the results that Dr. Campbell reports with the endocrine substances that promote ovulation in the human female.

We are heartily in accord with him in regard to the ineffectiveness of the pituitary-like substance obtained from pregnancy urine. In view of the recent reports concerning the transitory effect and the disagreeable sidechain effects of the male sex hormones in young individuals we would add our admonition to that of Dr. Campbell that it be used with great care.

Crowded living conditions, mounting prices of necessities, increased mental, emotional and physical strain — inevitable by-products of industrial defense activities — are factors dangerously favorable to the increase and spread of tuberculosis. Kendall Emerson, M.D.

CANCER AND PRECANCEROUS LESIONS OF THE LIP

FRANK E. SIMPSON, A.B., M.D.

CHICAGO

The lip presents two surfaces, the internal surface being mucous, the external, cutaneous, with a free border between — the vermillion part of the lip.

The vermillion part varies in width from a few mm. to one or more cm. being widest in the central part of the lip. Externally, the vermillion part is well demarcated from the skin — internally, its definition from the true mucous surface is less sharp.

Cancer of the Lip. Cancer is the most important of the complex pathologic processes affecting the lip.

Etiology. The cancerous process consists essentially of an "uncontrolled multiplication" of epithelial cells which break through the basement membrane and invade the deeper tissues. Once started, cancer untreated continues in the living body indefinitely even after the exciting agent is removed. The nature of the exciting agent may be different in different cancers.

Animal experiments indicate that the cause of the "uncontrolled multiplication" of epithelial cells characteristic of cancer lies in the occurrence of some subtle, permanent change in the cell itself. The exact nature of this cellular change still remains a secret.¹

In discussing the etiology of cancer of the lip the following factors may be considered: —

Age. Labial cancer occurs most frequently between the ages of 50 and 70, but also in those much older or younger.

Sex. Over 90% of cases occur in males.

Heredity. Believed by some to be of great importance, Broders² found in a study of 537 cases that the influence of heredity was negligible.

Precancerous lesions. This term has been criticized but is nevertheless useful to indicate certain well-defined lesions which may but do not necessarily terminate in cancer.

Boyd³ says "Great uncertainties and differences of opinion prevail regarding the relation of these lesions to tumor formation. A precancerous lesion is one which precedes the development of malignant disease, usually carcinoma, occasionally sarcoma."

The chief precancerous lesions of the lip are:

1. *Benign Tumors.* (a) Melanoma (Figure 1) On the vermillion part of the lower lip, a black spot may appear, which is at first barely visible to the naked eye. The black spot, contrasting sharply with the red of the lip, may be punctate, linear, round, oval or irregular, the surface being smooth and covered with unbroken mucous membrane. For a long time, the lesion is not palpable. It gradually enlarges by thickening or more often by peripheral extension. Several

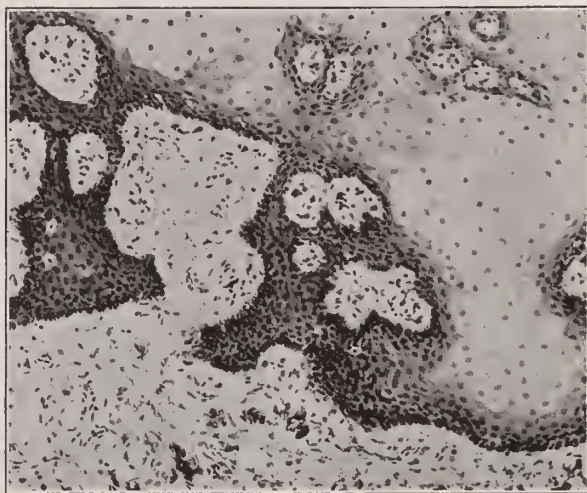


Fig. 1. Photomicrograph of section of smooth black lesion 1 cm. in diameter in center of vermillion part of lower lip. Female, aged 39.

Pigment cells which appear to be melanophores underneath epithelium and in papillae.

Granulation tissue underneath epithelium.

Inflammatory acanthosis. Probably precancerous.

Microscopic diagnosis: Dr. E. R. Strauser.

Excision 12-13-38: Dr. R. W. McNealy.

years may elapse before the black spot is a centimeter in diameter. Appearing in persons 35 or 40 and even in those who are younger, the lesion, at first apparently benign, may terminate in melanotic cancer ("malignant lentigo").

In the last few years, we have seen three cases of this disease affecting the lower lip which were successfully treated by early excision.

Other sites may be affected. A similar black spot, at first apparently benign, may develop under the nail in the nail bed or in the paronychia tissue, the thumb and great toe being favorite sites ("malignant whitlow").

The pathogenesis of melanoma has been discussed in a previous paper.⁴

(b) Pigmented nevus.

(c) Papilloma — a wart-like growth.

2. *Cysts* — sebaceous.

3. *Hypertrophies.*

(a) Keratosis — a yellowish crust or horn-like excrescence.

(b) Leukoplakia — pearly white, flat or slightly elevated spots or patches — often called "smoker's patches," although not always due to tobacco.

(c) Erythroplakia (Erythroplasia) — a red, shiny, velvety plaque.⁵

4. *Atrophies* — physiologic involution — "old age" of the skin; lesions of xeroderma pigmentosum or lupus erythematosus.

5. *Chronic inflammation* — Characterized by varying degrees of scaling, excoriations, cracks, ulcerations, crusts, fibrosis and "soreness."

To Billroth's dictum — "without previous chronic inflammation cancer does not exist" — there are of course some exceptions.

Chronic inflammation may be *simple, specific* or *idiopathic*.

Simple chronic inflammation. Predisposing causes include — nutritional disorders — Avitaminosis A or B; Roentgen xerostoma — dry mouth.

Exciting causes are usually local, chronic irritants to which the lower lip especially is exposed.

If the action of an irritant lasts long enough, cancer may develop, the usual sequence of events being (a) chronic irritation lasting months or years (b) a precancerous lesion (c) cancer.

Irritants acting singly or in combination may be:

(a) Mechanical — pressure of a tobacco pipe-stem or a rough tooth, biting the lips, holding nails, pins or tarred needles between the lips as practised in some occupations.

(b) Chemical — tobacco, cigarette paper, tarred needles, lip-sticks or other cosmetics, saliva.

(c) Thermal — tobacco-pipe, burns from hot food, drink, cigarettes, molten iron in foundries, exposure to sun, hot or cold winds.

(d) Actinic — excessive irradiation (x-rays or radium), exposure to sun.

(e) Biologic — pyogenic or other micro-organisms.

Specific chronic inflammations — syphilis (gumma) and tuberculosis of the lip — may rarely terminate in cancer.

Idiopathic chronic inflammation, as in lupus erythematosus, may rarely terminate in cancer.

6. Scars — the result of injury or disease.

PATHOLOGY

UPPER LIP. Cancer affecting the cutaneous surface of the upper lip is usually basal-celled; involving the muco-cutaneous junction or mucous membrane, squamous-celled.

LOWER LIP. Cancer of the lower lip is usually squamous celled. Due probably to lymph or blood stream transference of cancer cells rather than to contact, squamous celled cancer of one lip (usually the upper) may very rarely be followed by cancer of the other lip.

Rarely adenocarcinoma may arise in the body of either lip.

In 1920, Broders² divided squamous celled cancer of the lip into 4 grades of malignancy depending on the degree of cell differentiation and mitosis, special stress being laid on the former. In a study of 537 cases, about 78% were of grades 1 & 2; these were of relatively low malignancy. Grade 3 constituted about 21% and grade 4 about 1% of the cases; these were of high malignancy. Since the publication of his original paper, Broders has slightly modified his method of grading.²

CLINICAL FEATURES

Site. In 98% of the cases, cancer occurs on the lower lip. It begins most frequently at the muco-cutaneous junction; more rarely on the mucous or cutaneous surface.

Signs. Cancer may start (1) *de novo* in previously normal tissue⁶ (2) in a precancerous lesion.

1. Origin *de novo*. Some believe cancer never starts in sound tissue.⁷ It is of course impossible to exclude the existence of a minute precancerous lesion.

2. Origin in precancerous lesions. It is impossible to determine clinically or microscopically the exact moment when cancer begins. If a precancerous lesion rather suddenly shows changes in its physical character — increased pigmentation, growth, increased scaling, excoriations, a crack or an ulceration, bleeding, lumpiness or induration — cancer may be starting.

Sometimes the first definite clinical sign of cancer is the appearance of one or more pearly white papules — epithelial "cell nests" — which are in the beginning barely visible to the naked eye.

If "seborrhic inflammation" of the lip exists, cancer cells may develop and infiltrate the lip widely without causing a definite induration.

Usually cancer cells as they multiply form a lump several millimeters in diameter and hard to the touch. The lump breaks down centrally and

treated cases live from one to three or more years. Death is usually due to metastasis, hemorrhage, septic infection, edema of the glottis or pneumonia.

METASTASIS

Squamous-celled cancer of the lip may spread,



Fig. 2. Squamous celled epithelioma of lower lip.



Fig. 3. Treated with surface applications of radon; clinically well over 3 years.

a superficial or deep crack or ulcer develops which discharges serum, pus or blood.

The size of the ulcer varies from a few mm. to one or more cm., the shape being linear, round, oval or irregular. The surface is uneven and may be concealed by crusts.

As the lesion slowly progresses, it assumes like cancer elsewhere an everted or inverted form, the former sometimes being wart-like, the latter deeply infiltrated with a raised, irregular, sometimes polycyclic border. The border and base are hard to the touch.

The two forms may coexist in the same lesion. Cancer may destroy the lip, the soft tissues of the chin and adjacent areas and finally affect the mandible.

Symptoms. Early cancer causes little or no pain although a precancerous or cancerous "sore spot" due to an excoriation or a crack may have existed on the lip for many months.

We have seen cancer of the lip many centimeters in extent which the patient insisted caused no pain.

Course. The course of cancer is chronic; un-

usually by lymphatic embolism, to the adjacent lymph nodes of the neck; much more rarely to distant organs by the blood stream.

Squamous-celled cancer of the upper lip usually metastasizes early to the submaxillary or upper deep cervical nodes of one or both sides of the neck.

If the lateral part of the lower lip is involved, the submaxillary lymph nodes are usually affected; if the central part of the lip is involved, the submental nodes. The deep cervical nodes are involved later. Sometimes the nodes on the side opposite to the lesion are involved first. Grade 1 seldom if ever metastasizes. In grade 2 metastasis may be delayed for a year or more. Grades 3 and 4 usually metastasize early.

Basal-celled cancer seldom metastasizes; adenocarcinoma metastasizes late.

DIAGNOSIS

A black spot, a wart-like growth, a yellowish crust or horn-like excrescence, a pearly white, circumscribed spot of leukoplakia, a red, shiny, circumscribed plaque, an excoriation, a crack or a

"sore spot" on the lower lip lasting more than a few weeks may be regarded as precancerous particularly if occurring in persons past 40.

Inspection of the lesion may be sufficient for diagnosis. Palpation should be gentle. Squeezing a lesion to test its consistency is contraindicated.

MICROSCOPIC EXAMINATION

Biopsy and microscopic examination are necessary for a positive diagnosis of cancer. Differences of opinion exist as to the advisability of biopsy in lesions that are precancerous or in a very early cancerous stage.

Some demand biopsy in practically all lesions of these types — others believe precancerous or very early cancerous lesions may be treated without subjecting the patient to exacting scientific investigation. We believe that, as a rule, clinical diagnosis of very small lesions by the surgeon or dermatologist is sufficient. Minute lesions, if biopsy is deemed advisable, should be widely excised rather than subjected to partial excision as in the ordinary biopsy.

Anesthesia for biopsy may be obtained by the application of "cocaine mud" or nerve block. Infiltration of novocaine solution into the lesion is contraindicated.

A wedge of tissue 2 mm. in diameter may be taken from the edge of the lesion. A sharp knife is preferable to scissors or a cutting forceps for biopsy. A little bleeding to wash out loose tumor cells is desirable. A biopsy wound should not be cauterized or stitched up.

DIAGNOSIS OF OTHER LESIONS

Syphilis. In gumma, the most important lesion resembling cancer, the Wassermann reaction is usually positive and antisyphilitic treatment given as a diagnostic test will cause rapid healing in from 1 to 3 weeks.

Blastomycosis. We have recorded one case affecting the lower lip and chin, which was healed by radium.⁴

Other diseases, well known to the dermatologist, include: — 1. tumors — sarcoma, xeroderma pigmentosum, angioma, lymphangioma, keloid, 2. cyst-like lesions — milia, Fordyce's disease, implantation cysts, 3. inflammations — "eczema", herpes febrilis, "boils", sycosis vulgaris, perlèche, cheilitis exfoliativa, cheilitis glandularis, lichen planus, lupus erythematosus,

tuberculosis, syphilis (chancre, mucous patches), rhinoscleroma (upper lip).

For the diagnosis of these diseases the reader is referred to dermatologic treatises.

TREATMENT OF PRECANCEROUS LESIONS

Obvious chronic irritants should be removed. Treatment should be adapted to the nature of the lesion.

1. Melanoma. Early excision is advisable. Radium is contraindicated.

2. Wart-like growths, keratoses and erythroplasia may be treated with radium.

The technic is similar to that used for cancer but the dosage is less varying with the nature of the lesion.

3. Leukoplakia may disappear spontaneously if tobacco is stopped. Treatment may not be needed but periodic examination is advisable. Neoplastic leukoplakia may sometimes be treated with a 1/4 strength radium plaque, screened with 1/10 mm. of lead. Three treatments of 5 minutes each may be given on successive or alternate days. If leukoplakia shows marked thickening, exfoliation, cracking or bleeding, cancer may be imminent and biopsy should be performed. If cancer is found, excision or radium treatment is indicated.

4. Excoriations, cracks or a "sore spot" should seldom if ever be cauterized, as cancer, if present, may be stimulated. Lesions of these types especially cracks occurring at the angles of the mouth may be due to lack of vitamin B.

The administration of vitamin B complex may result in recovery.

5. Hypertrophic scars or keloids may be leveled with radium. The technic of treatment has been given in a previous paper.⁴

TREATMENT OF CANCER

Surgery and radium "should be considered as complementary rather than competitive in the treatment of malignant tumors."

Surgery.

1. Squamous-celled cancer. Grades 1 & 2 may be treated by surgery or radium; grades 3 & 4, by radium. Large and deeply infiltrated lesions may be treated by surgery combined with conservative pre and post operative surface applications of radium.

2. Basal-celled cancer. Surgery is seldom indicated.

3. Adenocarcinoma should be excised. Cancer developing in scar tissue should also be excised.

Surgical results from wide excision of cancer of the lip are good, approximately 70% of cases remaining well for a 5 year period.

Radium. James Ewing says:⁸ "Although

unfavorable factors in the radium treatment of cancer.

Radium Technic. Two methods have been advocated (1) surface irradiation (2) radium "puncture." We mention the latter method only to condemn it. Radium "puncture" of the lip



Fig. 4. Squamous celled epithelioma of lower lip.



Fig. 5. Treated with surface applications of radon; clinically well over 14 years.

surgical results with labial cancer are excellent, radium accomplishes as much or more without mutilation. Any one who understands human nature cannot doubt that many more people will submit to radium therapy than to the knife and do it earlier. The treatment of many more suspicious or precancerous lesions will also be accomplished by the simple methods of radiation."

Squamous-celled or basal-celled cancer of the lip not over 2 or 3 cm. in diameter may usually be healed by radium. Even larger lesions may respond well. Everting lesions are more easily healed than inverting types.

In inoperable lesions, radium may give palliation and occasionally a case may be cured.⁴

Lesions that persist after numerous operations, prolonged and unsuccessful irradiation, application of cancer "pastes" or other destructive treatments may do badly. If the tumor bed has been previously injured there may be a lack of vital reaction on the part of the tissues necessary for the best effects of radium.

Chronic alcoholism, syphilis and diabetes are

is traumatic and entails a good deal of pain and destruction of tissue. The cosmetic results are poor. If recurrence takes place further irradiation is rendered difficult and may be ineffective. The manipulation of the lip may easily cause metastasis. Although used by some authors, we believe radium "puncture" of the lip is contraindicated.

Surface Irradiation. Our technic consists usually in the irradiation of the external, internal and superior aspects of the lip.

The technic depends on the configuration of the lesion, being essentially the same for the upper and lower lip. The external aspect is usually irradiated first; the internal, next; the superior, last.

Assume a lesion of the lower lip is to be treated.

With the patient lying on a table behind a heavy lead angle plate, a thin roll of cotton is very gently tucked between the inner surface of the lip and the gum so as to bring the lesion out and away from the gum. Great care must be taken not to crack or traumatize the lesion.

A rubber finger cot, stuffed with cotton, is placed parallel with the lips between the teeth. Pieces of gold, 4 mm. thick, may also be used to aid in protecting the gums, upper lip and point of the chin.

We have long since abandoned all sorts of moulages for holding the radon tubes against the lesion.

The construction of moulages involves unnecessary traumatism to the lesion and may be a cause of metastasis. We use a rubber or balsa wood block which is gently laid on the lesion and held in place by adhesive tape. The block may be from 0.5 to 1 or more centimeters thick in order to give the required distance of the radon from the lesion.

An applicator containing from 250 to 500 mc. of radon screened with 2 mm. of silver may be laid on the block. The greater the distance of the radiating source from the surface of the lesion, the larger should be the quantity of radon.

Superficial Lesions. Assume area of plane of longest diameter of tumor to be 4 sq. centimeters.

The radon tubes being 0.7 centimeters distant from the lesion (silver screen = 0.2 cm. plus balsa wood block = 0.5 cm.) a total of approximately 60 to 65 millicurie hours per square centimeter of irradiated surface may be given in seances of from 10 to 15 minutes each.

Deep Lesions. Assume area of plane of longest diameter of tumor to be 6 sq. centimeters. At 1.2 centimeters distance (silver screen = 0.2 cm. plus balsa wood block = 1 cm.) a total of approximately 250 millicurie hours per square centimeter of irradiated surface may be given in seances of from 15 to 20 minutes each.

Treatments may be given daily or on alternate days as office procedures.

It is important to irradiate several cm. beyond the tumor edge but care should be taken that the irradiations do not overlap.

No stereotyped method of using radium can be devised, however, to cover all contingencies and types of lesions. There is no such thing as a "cancer dose." One should always give the "toleration dose" i.e. the dose one believes the normal tissue will tolerate without serious impairment of its integrity.

Lymph Nodes of the Neck. The surgical and radiological treatment of the lymph nodes adjacent to labial cancer, a subject fully as im-

portant as the treatment of the labial lesion, has been discussed in a previous paper.⁹

RADIUM STATISTICS (1941)

	Number of cases
Number of consecutive cases of cancer of lip treated (1926-1938)	114
Cases with metastases in neck when first seen ..	10
Recurrence in lip and development of metastases ..	2
Recurrence in lip and later successfully excised ..	1
Clinical recovery under radium (3 to 15 years) ..	101 (88.5%)

BIBLIOGRAPHY

1. Simpson, F. E. The Cause of Cancer. Ill. Med. Jour. 73, No. 6, June, 1938. PP. 468-475.
2. Broders, A. C. Squamous cell epithelioma of lip. Jour. A.M.A. 74, No. 10, March 6, 1920. PP. 656. Ibid. The Treatment of Cancer and Allied Disease. Paul B. Hoerber, N. Y. 1940. Edited by Pack & Livingston, I, PP. 26.
3. Boyd, W. A. Text Book of Pathology. Lea & Febiger, 1936. PP. 286.
4. Simpson, F. E., Breed, J. E. & Thompson, J. S. Radium in the treatment of diseases of the skin. Ill. Med. Jour. 75, June, 1939. PP. 521-542.
5. Sutton & Sutton, R. L. An Introduction to Dermatology. C. V. Mosby Co., 1941, PP. 393. Goldman, L. Precancerous lesions of the skin. Jour. of Medicine. Aug. 1936.
6. Sabouraud, R. Regional Topographical Dermatology. 1906, PP. 80-81.
7. Mayo, W. J. Susceptibility to cancer. Proc. of Staff Meetings of Mayo Clinic. 4, March 1929.
8. Ewing, J. Radium Report of the Memorial Hospital. (Second series 1923) N. Y. PP. 277.
9. Simpson, F. E. Epithelioma of the Lip. The Urologic and Cutaneous Review. 42, No. 4, April 1938. PP. 272-276.

NEPHRITIS IN CHILDREN

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TYPES OF NEPHRITIS most commonly seen in children are: 1. Acute glomerular (hemorrhagic) nephritis. 2. Lipoid Nephrosis.

Acute Glomerulo-Nephritis.

Etiology: Toxic effect on the glomeruli of hemolytic streptococcus infections especially tonsillitis, otitis, cervical adenitis, nasal sinusitis and scarlet fever.

Pathology: Inflammatory changes in the glomeruli with proliferation of the endothelial cells resulting in a diminished blood flow thru the glomeruli.

Symptoms: *Acute onset* several days to weeks after beginning recovery from antecedent infection (latent period) — may vary from slight malaise to stormy with convulsions and anuria. Following scarlet fever acute nephritis occurs late in convalescence (18 to 21 days after eruption). Onset frequently coincides with a re-

From the Sarah Morris Children's Hospital of Michael Reese Hospital Chicago. Read before the Post-graduate Conference of the Illinois State Medical Society at Decatur, Oct. 8, 1940.

newed activity of the strep. in throat, cervical glands, sinuses etc. Occasionally occurs without any evidence of a septic focus.

Urinary syndrome always present — in mild forms may be present alone — albuminuria, hematuria (may cause urine to look smoky) — occasional casts and leucocytes. Oliguria or even anuria may be present especially early.

Edema is usually not marked — puffiness about the face and eyes — some swelling of the ankles.

Non-Protein Nitrogen Retention is usually present during the early stage of diminished urinary output. — Blood urea increased in varying degrees.

Hypertension usually present — exists if blood pressure is over 110/70 in children.

Pain and Fever — little if any caused by the nephritis itself.

Course and Prognosis

Most clear up in 2 to 3 months or less. — Urinary picture is last to clear.

Amount of early hematuria, albuminuria, edema, non-protein nitrogen retention or hypertension has no effect on ultimate prognosis.

Immediate prognosis worse if complications develop — these have no effect on ultimate prognosis.

Guarded prognosis and danger of chronicity if

1. No history of recent acute infection.
2. Considerable edema persists for longer than two weeks.
3. Functional impairment persisting longer than four months especially low urea clearance and low specific gravity in concentration test. If these are normal within 4 months, even though some albuminuria and microscopic hematuria persist — outlook is good.
4. Considerable anemia or malnutrition.

Complications

Hypertensive encephalopathy or cerebral symptoms.

Due to edema of brain or vascular spasm of blood vessels of brain —

Occurs usually during first few days of acute nephritis and is *immediately dangerous to life*. Fairly common in children.

Symptoms: Acute onset. *Rapidly rising blood pressure* is of great significance. Epigastric pain — nausea and vomiting. Headache. Visual disturbances such as seeing spots, temporary blindness, etc. Convulsions and coma.

No relation to amount of edema, degree of nitrogen retention in the blood (may occur with an N.P.N. of 40), severity of the hematuria, anuria, amount of proteinuria — no correlation of these to degree of cerebral symptoms.

Acute uremia (renal insufficiency)

Insidious onset — symptoms most pronounced after first week. Anuria or oliguria persisting for a week or longer. *Rising non-protein nitrogen retention to extremely high levels after a week or more*. Uriniferous breath — acidosis. Drowsiness — later coma — convulsions rare except terminal. Not very common in children. *No relation to degree of hypertension, edema, hematuria or albuminuria* — the two former may even be absent.

Cardiac (myocardial) Failure (acute): Not common in children. Related to hypertension and infection. Due to hypertension plus toxicity from original focus.

Symptoms: Tachycardia, palpitation, weak pulse, cardiac enlargement, dyspnea, pallor, pulmonary congestion, liver enlargement and E.K.G. changes often similar to anterior infarction.

Treatment of Acute Glomerulo-Nephritis

1. *Elimination of Infection* and infected foci very important to prevent further renal injury — has no effect on damage to kidney already done.

A. *Sulfanilamide*. Acute nephritis nearly always associated with *hemolytic streptococcus infection*.

Sulfanilamide specific in suppressing such a focus if *original strept infection is still active* — uncertain value if no clinical evidence of acute infectious disease.

No adverse effects on renal function, but when kidney function is diminished, excretion of sulfanilamide impaired to about same degree as urea excretion i.e. if urea retained in abnormal quantities in the blood, the drug will be also. Consequently blood determinations are important every few days under these circumstances. — 6 to 10 mg. per 100 c.c. is proper level.

Alkalies not given with sulfanilamide — because danger of alkalosis — inability of damaged kidney to excrete fixed bases.

Dose: Start with gr. $\frac{3}{4}$ per lb. ideal body weight per 24 hours. *First 24 hours.* Give $\frac{1}{4}$ of this initially and again in 4 hours and $\frac{1}{8}$ every 4 hours for first 24 hours. *Second 24 hours.* $\frac{1}{6}$ every four hours. *Maintenance dose*

determined by blood level. *Administered by mouth* if no vomiting — otherwise subcutaneously. Especially watch blood level if oliguria, anuria or marked nitrogen retention.

B. Immune Serum. Human convalescent scarlet fever or streptococcus serum also efficacious in eradicating inciting infection — especially if given intravenously in 40 to 60 c.c. doses.

C. X-Ray therapy especially to subacute cervical adenitis and tonsillitis.

D. Minor Surgical Measures. *Tonsils* should not be removed until after recovery. *Suppurative Cervical Adenitis* if fluctuating — incised. *Nasal Sinusitis* — shrinkage and suction — occasional antrum puncture. *Suppurative Otitis Media* — drum incised — mastoid operated on when indicated. *Abscessed teeth* if present — not more than one extracted at a sitting. *Always advisable to administer sulfanilamide before and after surgical procedures to avoid temporary exacerbation of nephritis.*

2. Diet **A. Low protein** — 1 gm. per kilo of ideal weight per 24 hours until blood urea returns to normal — (usually not longer than a week or two) then normal protein content in diet for the age of the child. Urea clearance impaired by diminished blood flow to glomeruli.

B. High carbohydrate — children like it — avoids ketosis.

C. Low salt — 2 gm. per day — especially while oliguria and edema persist — kidney not able to eliminate normal quantities of salt — due to decrease in glomerular filtrate — Need not always be so sharply restricted unless rapidly increasing edema or rising levels of serum sodium chloride. Salt is restricted until edema has disappeared and diuresis well established.

3. Fluids. Cause of Edema. In acute nephritis, (due to arterial constriction, glomerular exudate, etc.), there is decreased glomerular blood flow resulting in decreased glomerular filtrate, causing kidney to fail to eliminate normal quantities of water and salt (result is edema).

Ideal Treatment: Restoration of normal glomerular blood flow. Diuretics: No known diuretics will increase glomerular blood flow and are contraindicated — mercurial diuretics diminish tubular absorption but this factor is not at fault — should not be used.

Fluids: Normal blood volume should be

maintained — Prevent dehydration but avoid excessive fluids — better to err on side of too much.

Regulated and governed somewhat according to output. If child excretes in urine $\frac{1}{2}$ or more of intake — amount of intake may be increased gradually up to the normal fluid intake as long as this ratio holds.

If oliguria or anuria with a rising level of non-protein nitrogen persist for more than 5 days after onset of nephritis, push fluids to promote diuresis even in presence of edema. If no diuresis after 5 days, — 500 to 1000 c.c. of weak tea or water (depending on size of child), is given within $\frac{1}{2}$ hr. if possible, early in A. M. — may be repeated daily for a day or two.

If marked hypertension, cerebral manifestations or myocardial weakness, do not force fluids as may aggravate these complications even in absence of edema.

Type of Parenteral Fluids — when vomiting persists use 10 per cent. dextrose — rarely add normal saline unless severe vomiting and dehydration.

Modified Volhard Diet for Children. Only recommended in the early stages of severe acute nephritis especially those accompanied by considerable hypertension. *Only to be continued for 3 or 4 days at the outside after the onset of acute nephritis.*

Pint of bland fluid daily e.g. orangeade, lemonade, sweetened weak tea, sugar water.

Small portions of food three times daily as $\frac{1}{2}$ orange, grapefruit, or baked apple, graham cracker.

Milk and cereal added after 3 or 4 days and as improvement takes place diet is gradually increased in quantity and variety to that consistent with a normal diet for the age.

Karrell diet recommended by some few. (not generally used).

Milk — between a pint (500 c.c.) and quart (1000 c.c.) depending on size of child, given daily divided into four feedings — 1000 c.c. provides 600 to 700 calories, 30 to 35 gm. of protein and 1.8 gm. of sodium chloride.

When diuresis begins — add fruit juices, fruits, cooked vegetables (except corn, peas, lima beans), cereals, puddings, butter, jelly, sugar, honey and cream. Gradually the diet is built up to normal.

4. General Measures: Bed rest until ordinary

examination of urine is practically negative — average is 6 weeks — after 2 months may be up if only tr. of alb. and occas. R.B.C. in urine and otherwise normal. *Warmth*: Avoid chilling or exposure to cold — warm bed clothes etc. *Tonics for anemia*: *Vitamins*. *Diuretics drugs* are worthless in acute nephritis.

Special Treatment of Complications:

1. *Hypertensive encephalopathy*

A. *Magnesium sulphate* — *Per mouth* — if conscious and no vomiting — 1 to 2 oz. of saturated solution (50%) every 4 hours until symptoms subside — or rectally if can be retained.

Intramuscularly — when cannot be given by mouth or when rapid action is desired as when blood pressure is rapidly rising or convulsions or coma supervene 0.2 to 0.4 c. c. of 25 per cent. solution per kilo every 3 to 4 hours until symptoms subside.

Intravenously — for emergency — when convulsions, coma and hypertension do not respond to intra-muscular doses — 1 to 2 per cent. solution slowly intravenously until blood pressure drops to normal.

B. *Sulfanilamide* if original infection is still active — incompatible with MG.SO_4 and should not be used simultaneously. When convulsions or coma are not present use sulfanilamide first. When convulsions or coma are present use MG.SO_4 first.

C. 50 to 100 c.c. of 25 to 50 per cent. glucose intravenously at times as a dehydrating agent — never saline. Objection to glucose is secondary rise of intracranial tension — Sucrose as a substitute does not have this objection but experiments have shown it to be injurious to the kidneys — Sorbitol (another sugar) overcomes both the above objections.

D. Barbiturates occasionally necessary to control convulsions.

2. *Acute Uremia* — (persistent oliguria, anuria and rising N.P.N.) Push fluids especially 10 per cent. glucose intravenously to encourage diuresis. *Sweating* — (Heat cradle) Only when other measures have failed — caution because of debilitating effect on children — mild catharsis.

3. *Cardiac Complications*

Same as for hypertensive encephalopathy — 50 per cent glucose intravenously — magnes. sulph. — Fluids restricted. Rapid digitalization. Morphine for rest — oxygen for cyanosis.

Lipoid Nephrosis: Etiology Unknown. Febrile

complications frequently associated with pneumococcus infections, and 95 per cent have pneumococci in throat flora.

Much more common in pure form in children than adults.

Pathology. Degenerative changes in tubules — *Symptoms*: *Insidious onset* with:

Edema marked — general anasarca with ascites — edema fluid very low in protein content.

Urine during edema. *Oliguria*, high specific gravity 1.040, chlorides low, *Albuminuria* marked — 1 to 2 per cent. — principal cause of low blood proteins. *No Hematuria.*

Blood: *Normal non-protein nitrogen* (urea, etc.) — no retention. *Blood serum proteins diminished* from 7 per cent. to about 2 per cent. or less especially serum albumin with reversal of albumin globulin ration of 2 to 1. *Cholesterol* and other lipoids increased from 150 mg. to 500 or more per 100 c.c.

Blood pressure normal. *Renal Function* normal.

Complications: Intercurrent pneumococcal infections especially peritonitis, pneumonia — also erysipeloid skin lesions.

Course and Prognosis: Chronic with recurrences — loss of edema, etc., and exacerbations with much edema, fever, etc. (nephrotic crises).

About 50 per cent. eventually recover completely, remainder die of intercurrent infections especially pneumonia and peritonitis.

Treatment. No specific treatment.

Edema is outstanding difficulty, has a tendency to disappear or reappear even when no treatment is given — principal cause is decrease in osmotic pressure of blood plasma. Result of hypoproteinemia especially the small moleculued plasma albumin. These conditions favor rapid passage of water and diffusible ions from vascular system to extracellular spaces and retard transfer back to vascular system. Because of this extrarenal diversion into the tissues, less salt and water are excreted by the kidneys. Tubules reabsorb too much salt and water which is again lost to the tissue spaces.

Critical edema level for children is 1.2 gm of plasma albumin per 100 cc.

Daily weights and measured 24 hour urines to follow effect of therapy.

1. *To Raise Blood Proteins* correct hypoproteinemia or at least raise colloid osmotic pressure of the blood.

A. *High Protein Diet*: Optimal diet in protein content for ideal nitrogen assimilation. 3.6 gm. per kilogram of ideal body weight per 24 hr. — child 1½ to 3 years of age. 3.2 gm. per kilogram of ideal body weight per 24 hr. — 3 to 6 years. 2.0 gm. per kilogram of ideal body weight per 24 hrs. — 12 years old. Months required before much progress is made.

B. *Blood Transfusions* (especially when *Lyophile Serum* (Concentrated blood serum). Effect is often transient, as result in temporary increase in protein loss in urine. *Repeated* intravenous *injections of blood serum*, concentrated or otherwise, however, is frequently followed by diuresis and *should be tried*.

C. *Acacia* — 6 per cent. solution intravenously — Adult dose — not over 500 c.c. in one day — should take an hour to give — repeat on successive days or alternate days until 90 to 120 gm. given. Use begun 3 days after commencing administration of pot. nitrate. Advocated by some and denounced by others. Some element of danger and reaction such as urticaria, chest pain, dyspnea, fever etc. May depress rate of formation of serum protein, or damage liver.

D. Amino Acid solution intravenously — not excreted in urine, utilized by body, improves nitrogen balance — still in experimental stage.

II. *Restrict Salt* — especially sodium ion. Practical restriction of sodium chloride to 1 to 1.5 gm. — salt free butter and bread, no added salt in cooking or salty foods — selection of foodstuffs containing minimal amts. of sodium chloride (limitation of the amount of milk is very important).

May substitute Potassium chloride, 2 to 4 gm. daily in and on the food.

Extra vitamins are valuable to round out diet.

III. *Diuretics*: Only of value when plasma albumin is above critical edema level for children of 1.2 gm. plasma albumin per 100 c.c.

A. Acid-Producing Salts as Potassium nitrate (3 gm. t. i. d. with or after meals for adult and graduated down proportionately for children.), ammonium chloride (1 to 2 gm. daily). Potassium chloride (2 to 4 gm. daily) or calcium chloride.

B. *Mercurial diuretics* such as Salyrgan, Mercuro-purin, etc. intramuscularly, intravenously or rectally — probably do no harm although act on tubular cells which are already injured — better results if follow after a week or

more of acid producing salts, no spectacular results as in cardiac edema.

C. *Urea*, probable best diuretic in nephrosis — large doses necessary i.e. for 5 year old child, 40 to 60 gm. daily (15 gm. q.i.d.) in lemon juice, grapefruit juice or grape juice — May be given daily for as long as 6 weeks. *Stopped if blood urea rises over 20 mg. per cent.*

D. *Purine derivatives* (Diuretin, etc.) not much value in nephrosis.

E. *Thyroid in large doses* from gr.i to v t.i.d. occasionally causes diuresis.

IV. *Fluid Restriction* not necessary but they should not be forced — given ad. lib. Some, however, advise restricting to 800 c.c. in 24 hrs. including soup, milk etc.

V. Paracentesis when ascites or hydrothorax impairs vital functions (respiration, etc.) or when massive accumulation of fluid within these cavities. Unless strict asepsis, great danger of infection.

VI. *Rest in Bed* until edema has practically disappeared.

Treatment of Complications: *Streptococcus erysipeloid* skin lesions. Human convalescent scarlet fever serum. Sulfanilamide. *Pneumococcus Infections*, peritonitis or pneumonia. Specific immune rabbit serum. Sulfathiazol. Sulfapyridine may be dangerous because in concentrated urine may precipitate in renal tubules with resulting anuria.

THE IMPORTANCE OF GROWTH ARREST LINES IN RADIOLOGICAL DIAGNOSIS AND PROGNOSIS*

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Transverse lines are observed in only a small proportion of x-rays of long bones, but their occurrence may be of intense interest from a diagnostic or prognostic standpoint. The average radiologist may see only a few instances in a year, but the signs are there to be read, and familiarity with them may lead to a correct diagnosis or very helpful suggestions to a clinician not aware of the possibilities. Figure 1.

Lines occur in almost all bones, but their appearance in long bones is of more practical sig-

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**Many of the lantern slides illustrating this paper were of cases studied while at the University of Chicago Clinics.

nificance. In some instances their presence gives very positive information, while in others they are comparable to clues which do not give complete information, but which lead to interesting speculations. They also very definitely explain a great deal of the physiology of bone growth. Information can be gained from a study of these lines in the same manner that information is gained from a study of concentric lines observed in the cross section of a tree. In such a section, it is possible with a proper degree of knowledge to read much of the life history of the tree — age, drouth years etc., for the story is indelibly



Figure I — X-ray of growing child's knee. Notice the lines in the distal end of the femur and the proximal end of the tibia due to administration of phosphorized cod liver oil. More growth has taken place in the distal end of the femur than in the proximal end of the tibia.

etched there. These lines are not truly analagous but the practical information to be gained from osseous lines is similar.

Abundant experimental and clinical evidence shows conclusively that interstitial growth of bones does not occur. Shaft growth occurs at the end of the bone due to proliferation of the epiphyseal cartilage on its shaft side, while growth of the epiphysis itself is due to growth of the articular cartilage and *not* proliferation of the epiphyseal cartilage on its juxta-epiphyseal side. The presence of lines focuses attention on the portion of the bone where growth is localized. It also recalls to mind the fact that trauma,

even excessive x-ray dosage, may cause deformity by injury to these growing cells.

Wegner in 1874 called attention to increased trabeculation at the ends of long bones in rachitic children treated with phosphorus. Phemister in 1918 noted that formation of bands in the bones of children during the administration of elemental phosphorus. Since these original contributions, other observations have appeared in the literature. The reason the lines are evident in the radiograph is that on microscopic examination the trabeculae have been found to be far more numerous than normal and, therefore, more closely packed. In the aggregate, they obstruct the x-rays more than the surrounding bone and appear as lines on the film. At times the trabeculae have showed branching and even transverse bridging. While most lines form during the postnatal period, it has been pointed out that administration of bismuth to pregnant luetic women causes lines which are clearly visible in the roentgenograms of newborn infants. A neonatal line which forms concomitantly with the changing environment at birth has been described as being constant in all deciduous teeth. Occasionally vitamin deficiency in the mother with congenital scurvy in the infant causes transverse shadows in the long bones. Almost any severe illness in a child will leave its radiological mark in the form of a growth arrest line. Scarlet fever is notable in this respect. Their appearance in a roentgenogram immediately postulates an interesting line of thought concerning their etiology.

The appearance of a transverse line is probably best used diagnostically in the corroboration of clinical findings in lead poisoning in children. It is the most constant finding in lead encephalopathy, and in some instances the finding of the line alone has been responsible for the correct diagnosis. Bucy reported an interesting case in which the correct diagnosis was arrived at because of the continued presence of lines three years after the illness. The lead line is practically identical with the lines of phosphorus and bismuth. Since they form as long as the drug is in the system, the depth of the lines gives some idea of the length of time over which ingestion has occurred. Intermittent exposure results in multiple bands.

There are times when it is important to know whether growth has partially or completely

ceased at an epiphysis. The appearance of the epiphyseal line is usually a good guide, but at times it appears open when growth has partially or completely ceased. If a growth line happens to be present it may show partial arrestment of longitudinal growth by angulation of the growth line with the line of the epiphyseal cartilage or failure of the line to move away from the epiphyseal cartilage when compared with its mate. If no growth line is present, and the possibility of growth arrest is suspected, we have a perfectly innocuous drug in phosphorized cod liver oil with which to make a line for future comparison.

Conclusion. In conclusion, it may be said that lines appearing in the roentgenograms of long bones not only reveal much of the physiology of bone growth, but also assist materially in the diagnosis of certain conditions and to some extent foreshadow the future of lesions about the epiphyses.

CLINICO-PATHOLOGICAL CONFERENCE*

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AND

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Dr. Edwin F. Hirsch, Chicago: "The procedure in presenting autopsy material to large groups is unsatisfactory unless the demonstrations can be made so that all simultaneously can see or follow the tissue lesions and clinical data presented. A satisfactory solution of some of these difficulties has been reached at St. Luke's Hospital, Chicago, by the use of projection whereby important details of the clinical course and diagnosis of the patient's illness, the essentials of the anatomic diagnosis of the post-mortem examination, the demonstration of gross tissues illustrating the significant lesions, and the details of histologic structure are presented on a large projection screen. The demonstrations of histologic structure are made with a micro projector, all of the others with an opaque object projector. Such a working plan is flexible enough to provide ample opportunity for discussion by those in attendance.

CASE 1

A Negress, aged 71 years, entered St. Luke's Hos-

pital on Mar. 4, 1940 and was discharged on March 7, 1940; death at home on Mar. 23, 1940.

Chief Complaints: The complaints on entrance were eructation, nausea, and vomiting of 40 or 50 years' duration, substernal distress and pain of 35 years' duration, precordial distress and pain radiating down the left arm with epigastric distress.

History: For the past 40 to 50 years, the patient stated that she had had attacks of nausea and vomiting which occasionally were accompanied by epigastric pains and discomfort. She was under medical care and on a fat-free diet for many years. During the previous 6 weeks, the attacks were more frequent and severe. They usually followed the ingestion of food and were associated with much eructation and precordial, epigastric and substernal pain. These attacks were usually followed by a pain in the left shoulder which radiated down the left arm and subsequent nausea and vomiting.

Physical Findings: The physical examination revealed a well-preserved Negress with a blood pressure of 146/104, a pulse of 84, a temp. of 97.6°, and a respiratory rate of 26. The lung findings were negative. The heart borders were displaced both to the right and left, and there was a blowing apical systolic murmur, and another over the aortic area. There was some tenderness in the left subcostal and epigastric region.

Laboratory Findings: The roentgen findings indicated myocardial pathology and a possible acute coronary occlusion. The Kahn was negative and the urinary findings were not unusual. The erythrocyte count was 4,370,000, the leucocyte count 4,200 and the hemoglobin 11.2 gms.%. The differential count was normal. A sedimentation rate done at this time was 21 mms. in 15 min. and 28 mms. at the end of an hour.

Course: Shortly after entrance, the temp. rose and followed an irregular course between 99 and 100° F. The patient was placed on conservative treatment and received a soft, bland diet, theobromine, luminal and ketochol as the indications arose. The patient felt well and was discharged on March 7. She died on the 23rd, 8 weeks after the onset of her acute illness and 40 years after the onset of her first symptoms.

Anatomic Diagnosis

Organizing infarct of the myocardium of the left ventricle of the heart;

Ulcerated atheroma of the circumflex branch of the left coronary artery;

Marked constricting calcified sclerosis of the anterior branch of the left coronary artery;

Atheromatous and calcified senile sclerosis and fatty changes of the aorta and main systemic arteries;

Chronic passive hyperemia of the liver, spleen, lungs and kidneys;

Senile nephrosclerosis of the kidneys, etc.

The heart weighed 500 grams. A recent subepi-

*From the Departments of Pathology and Medicine, St. Lukes Hospital.

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cardial hemorrhage extended along the first portion of the anterior descending branch of the left coronary artery. The pulmonic and tricuspid leaflets had no significant changes. The anterior mitral leaflet had fibrous thickenings and the ring behind the posterior leaflet was calcified for a length of 6 cms. The attachments of the aortic leaflets also were calcified. The ostiums of the coronary arteries were patent. In the lateral wall of the left ventricle extending from the apex upward along the septum behind for 5 cms. and reaching out 4.5 cms. was a partially organized infarct and for 2 cms. about this the myocardium was granular and dry. The first 1.5 cms. of the anterior descending branch of the left coronary artery was sclerotic, calcified and the channel was markedly constricted. The proximal portion of the circumflex branch of the left coronary artery had an ulcerated atheroma 6 mms. in diameter, and beyond the vessel was sclerotic and fatty. The right coronary also had marked sclerosis and fatty changes.

The changes in the other viscera were mainly those of chronic passive hyperemia and senility. The gall bladder contained bile with about fifty black concretions. 4 to 6 mms. in diameter.

Dr. Carl A. Johnson: This patient was under my observation from the time of her admittance to the hospital until the time of her death. Her past history was that of chronic gallbladder disease and this diagnosis was confirmed at autopsy. The history of her last illness, the physical and laboratory findings and the course were typical of an acute coronary occlusion. I was impressed by the ability of this 71 year old woman to withstand the severe exertion of competitive tennis to within six months of her death, in view of the extensive cardiovascular changes demonstrated at post mortem. During the summer preceding her death she won a tennis trophy which was one of the many she had won during her long and active life. On the other hand, atherosclerotic vascular changes may lead to symptoms which incapacitate the patient many years before death, as illustrated by the following case report:

Mr. D., a white male, aged 59 at death, entered St. Luke's Hospital on December 28, 1938 and died on January 3, 1939. His complaints on admittance were: dyspnea, orthopnea, swelling of the abdomen and ankles, and attacks of precordial pain which radiated down the left arm. The patient had had symptoms of vascular disturbances since 1927. At that time he had symptoms of intermittent claudication. In 1932 he consulted a physician who made a diagnosis of Buerger's Disease. The patient gave up his work in 1934 because of the severity of the symptoms. In 1934, while in New Orleans, he consulted another physician who confirmed the diagnosis of Buerger's Disease. A therapeutic perivertebral nerve block was attempted

but not completed because the patient had a coronary occlusion during the procedure and fainted in the operating room. In 1935 the patient had a mild stroke from which he made a good recovery. In the past few years the patient had had several heart attacks which were thought to be small coronary occlusions. The most recent one occurred shortly before admittance to the hospital. *Examination:* The heart was enlarged mainly to the left and by x-ray occupied 55% of the chest. The heart tones were faint and a gallup rhythm was present. The rate was 100. The blood pressure before the last illness was 164/100 on the right arm and 108/80 on the left. The radial pulse on the left arm could not be palpated. The legs were edematous and for a number of years the pedal vessels could not be palpated. The leg vessels could not be visualized by x-ray of the soft tissues.

Clinical diagnosis: Generalized cardiovascular disease, and acute coronary thrombosis (probably a posterior infarct). *Anatomical diagnosis:* Huge recent hemorrhagic and necrotic infarct of the myocardium of the left ventricle of the heart; acute fibrinous pericarditis; marked dilatation of the left ventricle of the heart; obliterating atheromatous, senile sclerosis and fatty changes of the first part of the left subclavian artery; obliterating atheromatous senile sclerosis, and fatty changes of the coronary arteries of the heart; marked calcified and atheromatous senile sclerosis of the aorta, right and left femoral and right subclavian arteries and of their branches.

Discussion of this case: This case is of unusual interest because of the long history of multiple arterial occlusions, and the erroneous diagnosis of Buerger's Disease made by two competent clinicians. Buerger's Disease is rare as compared with occlusive vascular disease from atherosclerosis. For this reason alone a presumptive diagnosis of atherosclerosis can be made with a greater degree of accuracy than of Buerger's Disease. A mistaken diagnosis such as this may cause a patient untold distress as he goes from doctor to doctor seeking relief from the diagnosis instead of seeking relief from his symptoms. With this patient, his diagnosis lead him from doctor to doctor more than his symptoms which could have been taken care of by the general clinician.

These two cases were very similar. Both had generalized atherosclerosis severe enough to lead to ulcerative changes of the coronary artery with occlusion. The first patient was able to lead a long and active life comparatively free from symptoms of occlusive vascular disease until shortly before death. The second patient presented symptoms of occlusive vascular disease

long before his death, which were sufficient to incapacitate him from carrying on his work. In addition, the second patient illustrates the difficulties encountered in making a diagnosis of Buerger's Disease during life without histological sections to confirm the diagnosis. Erroneous diagnosis such as illustrated by this report are common, and it cannot be emphasized too strongly that Buerger's Disease is a rare disease whose diagnosis should not be made on symptoms alone.

CASE 2

An adult white female, aged 42 years, entered St. Luke's Hospital on Mar. 30, 1940: death April 3, 1940.

Chief Complaints: Fatigue and weakness, weight loss, anorexia, visual disturbance, restlessness, marked dyspnea on slight exertion, marked edema, and nocturia.

History: The patient was well until about 7 mos. before entrance when she began to notice restlessness, fatigue, anorexia, and dyspnea on slight exertion. On Mar. 3, 1940, the patient entered the hospital complaining of the loss of 20 lbs. weight, blurring of vision, and occasional severe frontal headaches. The blood pressure was 222/154, the apex of the heart was 16 cms. from the mid-sternal line, and there was a loud apical systolic murmur. The liver was one finger below the costal margin in the mid-clavicular line. There was poor kidney function and repeated urine examinations revealed a low specific gravity of about 1.010, albumen as high as 750 mgms.% and hyaline casts. The erythrocyte count was 3,420,000, the leucocyte count 11,200, and the hemoglobin 10.5 gms.%. The urea N was 35, the total NPN 60, the creatinine 2.2, the cholesterol 240 mgms.% and the total serum protein 6.2 gms.%. The patient was discharged from the hospital on Mar. 17th with only slight improvement in her condition. She re-entered on Mar. 20th with complaints similar to those on the previous entrance.

Physical Examination: Examination on Mar 30th revealed edema extending to the axilla, a clear sensorium, purpuric spots over the lower costal regions, many scratch wounds, cold extremities, a slightly distended abdomen and hemorrhages into the fundus of the eyes. The temp. was 97°, pulse 148, and the respirations 28 per min. The blood pressure was 230/130. The patient had not urinated for 18 hours.

Laboratory: The laboratory findings included an erythrocyte count of 2,850,000, a leucocyte count of 20,100, and a hemoglobin of 8.6 gms.%. The urea N was 225, the total NPN was 260, the creatinine was 8.6 mgms.%, the alkali reserve was 28.9 vols.%, the serum albumin was 4.5, the globulin 1.5, and the total serum protein was 6.0 gms.%. The urine had a specific gravity of 1.013 and there were 750 mgms.% of albumin and a few granular casts.

Course: The patient's condition became progres-

sively worse despite careful attention to diet, fluids and salt balance. The patient was restless, had many spasmodic twitchings of the body, and became comatose shortly before death which occurred on April 3, 1940, 4 days after entering the hospital and about 7 mos. after the appearance of her symptoms.

Anatomic Diagnosis

Primarily contracted kidneys—malignant nephrosclerosis (uremia);
Acute fibrinous (uremic) pericarditis;
Marked hypertrophy of the myocardium;
Dilated chambers of the heart;
Acute catarrhal ileitis, colitis, and gastritis;
Fatty changes and senile sclerosis of the aorta and its main branches;
Anascara; etc.

Both kidneys were red-brown, contracted and hard. The right weighed 155 grams, the left 170. There were marked arteriolar fibrous thickening and hyalinization of the glomerular tufts. The heart weighed 525 grams, the spleen 340 grams, and the liver 1560 grams.

Dr. Carl A. Johnson: The clinical and laboratory changes observed in this patient illustrate the very rapid progress of the disease in patients with malignant hypertension. To illustrate this more clearly, the following table has been prepared from the laboratory reports of this patient:

TABLE 1

Chemical Examinations of the Blood				
	March 1940			April 1940
Date	4	11	15	1
Urea N	35	62	74	225
N.P.N.	60	88		260 plus
Creatinine	2.2	3.2		8.6
Sugar	113			
Cholesterol	240			
Alkali Reserve		60.7	48	28.9
Albumin				4.5
Globulin				1.5
Serum Proteins			6.2	6.0

In less than one month the urea rose from 35 to 225 and the N.P.N. rose from 60 to 260.

The electrocardiogram showed a slurring of QRS-I and an isoelectric T-I, a depression of ST-II and inversion of T-II, an upright QRS-III and inversion of T-III. The changes of myocardial damage found in the electrocardiogram could be expected, yet, in spite of the blood pressure and the findings of the markedly hypertrophied left ventricle, no left axis deviation was present.

This patient illustrates the rapid changes in the clinical and laboratory findings in the typical course of a malignant hypertension, with death in uremia. I would like to illustrate by a brief

case report, the clinical course of a patient with malignant hypertension who died from septic infarct of the lung following an acute coronary occlusion.

A colored male, age 46 years, was admitted to St. Luke's Hospital on Dec. 12, 1939 and died on Dec. 17, 1939. His complaints were: shortness of breath, orthopnea, swelling of the ankles, weakness, palpitation, and hypertension. He was at the Hines Hospital in April 1937 where his hypertension was discovered. He came under my observation in June 1937 with the above symptoms. The past history was negative except for a chancre in 1928, although repeated Wassermann tests later were negative. The patient did fairly well on medical management until his last admission to the hospital, when he failed rapidly and died. Examination showed an elevated temperature, pulse and respiration. The heart was enlarged and boot shaped. By x-ray, in 1937, it occupied 63% of the chest and in 1939 66%. The heart rate was rapid, the tones of poor quality, and a gallup rhythm was present. X-rays of the chest revealed a mass in the right lower lobe and a right pneumothorax. The electrocardiograms indicated myocardial pathology. The blood pressures were of unusual interest:

Year	1937	1938	1939		
Month	June	March	Jan.	April	Aug.
Blood Pressure	180	180	200	210	170-150
	130	130	150	160	130-120
Rhythm	Normal	Gallup	Gallup	Gallup	Gallup Alternation

On December 17, 1939 the blood pressure was 150/130 and the alternation was so severe that only every other beat could be heard over the brachial artery.

Anatomical diagnosis: Malignant nephrosclerosis; primarily contracted kidneys; multiple cortical adenomas of the kidneys; marked hypertrophy of the myocardium of the heart; fatty changes of the lining of the aorta, the pulmonary and systemic arteries; large healing infarct of the myocardium of the left ventricle and septum of the heart; fibroplastic myocarditis; multiple mural thrombi of the left ventricle and right auricular appendage of the heart; large liquefied infarct with ruptured pleura of the lower lobe of the right lung; right pneumothorax and serofibrinous pleuritis.

Both patients were comparatively young at the time of death, the first 42 and the second 46 years. Both had been hypertensives before death, the first for 5 years, the second for 3 years. In all probability, then, they represent the malignant phase of benign or essential hypertension. The first case illustrates the very rapid changes in blood chemistry with death in uremia, while the second illustrates a less common cause of death from coronary occlusion with an infarct of the lung which became septic. The changes

in the kidneys were of malignant hypertension which apparently had not progressed enough to produce the blood changes of uremia. In summary, the reports of these two patients illustrate the course of the malignant phase of essential hypertension, one with death in uremia, and the other with death from coronary occlusion and an infarct of the lung.

CASE 3

A white male, aged 75 years, entered St. Luke's Hospital on Mar. 7, 1940: death April 5, 1940.

Chief Complaints: Hematuria.

History: The patient first entered St. Luke's Hospital complaining of a lump in the right groin in Nov. 1939. A diagnosis of incarcerated inguinal hernia was made and corrected by surgery. At this time, he had hematuria but refused cystoscopic examination. He re-entered the hospital on Feb. 5, 1940, complaining of hematuria of 5 or 6 years' duration, nocturia for one year, and slight burning on urination for 5 or 6 days. He re-entered on March 7th because of continued bleeding. For the past 5 or 6 years the patient has had intermittent hematuria which lasted for 2 or 3 days and would disappear for 3 or 4 months. The last attack was the most severe. The blood was always evenly distributed in the urine and never more prominent at the end of urination. He had no urgency, dysuria, or difficulty in starting the stream and never had any pain in the flanks or abdomen. His last entrance on March 7th was 2 weeks after a transurethral resection of a papillary tumor of the bladder, following which the patient continued to bleed.

Physical Examination: The temperature, pulse and respiratory rates were normal and the blood pressure 160/90. The lungs were essentially negative. The heart had an enlargement to the left anterior axillary line and a "boot" outline. There was a loud systolic murmur but no irregularities. The abdomen was negative.

Laboratory Findings: The biopsy specimen obtained at the operation was diagnosed as a papillary carcinoma. Numerous examinations of the urine revealed a low specific gravity rising only when blood and albumin were present in considerable quantities. Erythrocytes were always present in variable amounts and leucocytes and bacteria increased in amount during the last two weeks in the hospital. At this time the leucocyte count, which had been approximately 11,000, rose to 21,000 and the differential count revealed a neutrophilia. The hemoglobin dropped steadily as did the erythrocyte count, from 14 to 3.6 gms. % and from 4,500,000 to 1,350,000 per c.mm. respectively. The blood chemistry value of the non-protein nitrogen was 35 mgms.%, rising to 66 mgms.% shortly before death and the carbon dioxide combining power remained approximately 52 volumes per cent. at all times.

Course: A palliative operation was done trans-urethraly and later a fulguration for the continuous bleeding. Ringer's solution and glucose were given intravenously in large amounts as well as blood transfusions, but the patient failed to rally and he died, 1 month after the last entrance to the hospital and about 5 or 6 years after the onset of his illness.

Anatomic Diagnosis

Extensive infiltrative and ulcerated carcinoma of the urinary bladder;

Carcinoma invasion of the perivesical tissues;

Carcinoma obstruction of the ureteral orifices;

Bilateral hydroureter and pyelonephritis;

Acute fibrinous (uremic) pericarditis;

Primary colloid carcinoma of the stomach;

Carcinoma invasion of the peritoneum of the stomach;

Acute verrucous mitral endocarditis;

Recent infarcts of the spleen;

Ascites, hydrothorax, anasarca; etc.

The indurated urinary bladder extended 5 cms. above the symphysis pubis. The peritoneum on the posterior wall had numerous single and confluent tumor nodules ranging to 1.5 cms. in diameter. On the right side, tumor tissues extended into perivesicle fat. The lining of the thickened urinary bladder above the trigone was markedly ulcerated. Both ureteral openings were involved. The seminal vesicles were small, the prostate had several regions of glandular hyperplasia. Both ureters and renal pelves were dilated with a purulent fluid. The renal tissues were reduced in amount and had focal abscesses. In the pylorus of the stomach was an ulcerated colloid carcinoma 8 by 7 cms. with raised scalloped edges and protruding into the lumen 2 cms. The peritoneum opposite was invaded. The carcinoma of the urinary bladder histologically consisted of large and small masses of pavement epithelial cells arranged in mosaics. The carcinoma of the stomach, in contrast, was glandular, consisting mainly of mucus secreting cells.

CASE 4

A white female, aged 37 years, entered St. Luke's Hospital on March 22, 1940: death April 6, 1940.

Chief Complaints: Excruciating precordial pain, dyspnea, and exhaustion.

History: The patient gave a history of a single attack of rheumatic fever 17 years before. Two years before entrance to the hospital, she had an attack of dyspnea and ankle edema, and this with extreme exhaustion forced her to bed. While previously, moderate exertion would provoke slight dyspnea, following this episode even slight exertion provoked severe dyspnea. There was a similar attack one year before admission. Two weeks before, there was a sudden attack of precordial pain followed rapidly by dyspnea, exhaustion, and edema of the lower extremities. She then remained in bed without further pain until 2 days before entrance to the hospital, when there was a

sudden excruciating precordial pain with associated pain over both shoulders and radiating down both arms.

Physical Examination: She had a blood pressure of 111/74, a respiratory rate of 26, and a heart rate of 116 with a radial pulse of 98. There was a grayish pallor, cyanosis, fluid in both pleural cavities, but more marked on the right and edema of the lower extremities. The heart borders were percussed at 12 cms. to the right, and 7 cms. to the left of the mid-sternal line. The heart rate was completely irregular. The liver was at the umbilicus in the midline and reached to within one finger's breadth of the right anterior superior spine. The spleen was questionably palpable, and there was tenderness in the right upper quadrant.

Laboratory Findings: The erythrocytes were 4,400,000, the leucocytes 20,600, and the hemoglobin 11.6 gms.%. The urea N was 33 mgms. and the total NPN 54.6 mgms.%. Urine examination was negative, except for a slight amount of albumin. The blood serum Kahn was negative. Electrocardiographs taken on Mar. 9th and 30th revealed right axis deviation, auricular fibrillation, and marked myocardial damage.

Course: The patient became progressively worse with absolute bed rest, sedatives, digifolin, and general care. She became comatose on April 6th. The patient failed to respond to caffeine sodium benzoate and before oxygen could be administered, she died, 14 days after entrance to the hospital, 2 years after the onset of marked cardiac symptoms, and approximately 17 years after the single acute attack of rheumatic fever.

Anatomic Diagnosis

Chronic calcified fibrous mitral endocarditis — mitral stenosis;

Dilated auricles of the heart;

Hypertrophy of the myocardium and dilatation of the right ventricle of the heart;

Mural thrombosis of the left auricle of the heart;

Mural thrombosis of the right branch of the pulmonary artery;

Multiple organizing infarcts of the right lung;

Infarcts of the myocardium of the left ventricle, the spleen, and both kidneys;

Fibrous thickenings of the leaflets of the aortic and tricuspid valves of the heart;

Chronic passive hyperemia of the lungs, liver, kidneys, and spleen;

Hydrothorax, ascites; etc.

The heart weighed 315 grams. Diagonally from the right auricle to the left apex it was 18 cms. and at the base it was 14 cms. wide and 7.5 cms. thick. The pulmonary veins and left auricle were markedly dilated. A mural grey-red thrombus 1 by 2 by 2 cms. protruded into the left auricle from the auricular appendage. The mitral leaflets were fused and thickened by calcified fibrous tissues. The mitral opening was a narrow crescentic slit 2.2 cms. long.

The leaflets of the tricuspid and aortic valves were thickened slightly by fibrous tissues. The endocardium of the left ventricle septum had several large fibrous thickenings. A recent infarct of the lateral wall of the left ventricle, 3.5 cms. in diameter, extended from the septum at a level 3 cms. above the apex. A mural thrombus of the right branch of the pulmonary artery extended 2 cms. from the hilum of the lung and was 1.5 by 1 cms. Both kidneys were marked by multiple retracted scars, and the spleen had a large recent infarct. The right lung had several recent infarcts.

Dr. Carl A. Johnson: When I was called to see this patient at her home, the symptoms were those of cardiac failure. As mentioned, her first attack of rheumatic fever occurred at the age of 19 years. Following that, she had two or three other attacks which confined her to bed, and in general she did fairly well until within two years of her death. Two days before admission to the hospital she developed an excruciating pain in the precordial region which radiated down the inner aspect of her left arm.

On examination the patient appeared extremely ill, was orthopneic and had a subicteric tint to her skin. No petechiae were found. Heart findings were those of a double mitral lesion with pericarditis and effusion. Two electrocardiographs were taken, the first showing a normal mechanism, but with evidence of myocardial pathology, the second showing in addition an auricular fibrillation with a ventricular rate of 130. There was dullness over the right lower lobe of the lung posteriorly. The breath sounds were decreased or absent over this region. X-rays of the chest suggested that this was due to fluid and possibly an infarct of the lung. The liver was large and tender. The extremities were edematous.

The treatment consisted of diuretic management, morphine for relief of pain, and small doses of digitalis. In addition about 200 cc. of fluid was withdrawn from the right chest. The patient did not respond to treatment and died April 6, 1940.

The autopsy revealed rheumatic heart disease with mitral stenosis and regurgitation, with pericardial effusion and multiple infarcts of the heart, lungs, spleen, and kidneys.

Prognosis is usually thought of as being better in rheumatic heart disease when it has its onset after puberty, but in this case this was not true. This case also illustrates the marked tendency

to embolic phenomena in rheumatic heart disease.

General comments on this method of presenting a clinical pathological conference: Such tremendous strides have been made in color photography, particularly when the miniature camera is used, that it is possible to make good reproductions very inexpensively. The illustrations which I have shown you were made in the morgue at the time of autopsy, and illustrate the excellent reproductions which can be made with ordinary equipment. This method of presenting material correlated with the method used by Dr. Hirsch at St. Luke's Hospital has stimulated a greater interest in pathology for clinicians and has proved invaluable in teaching medical students.

EARLY DIAGNOSIS OF POLIOMYELITIS

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(Editor's Note: This is the second of a series of four articles on poliomyelitis, appearing monthly in the Illinois Medical Journal.)

Acute anterior poliomyelitis in man in general follows a rather constant pattern and sequence of events. Following exposure (usually to an inapparent source) there is an incubation period which is believed to be about 14 days with extremes of 7 to 21 days. The illness first appears as a mild generalized ailment known as the "systemic stage" which progresses to a further stage in which symptoms of meningeal irritation are outstanding, the so-called "pre-paralytic stage." This is followed by the third stage which is characterized by the development of flaccid paralysis, the final "paralytic stage."

The disease may spontaneously terminate at any time during these various stages and there are ample grounds for belief that most infections with poliomyelitis never extend beyond the first stage so that the actual appearance of clinical, recognizable poliomyelitis is a rather exceptional occurrence in the not uncommon disease.

The first stage as noted above is usually only a mild generalized malaise with upper respiratory or mild gastro-intestinal symptoms. The physical findings in general are a fever of about 101°, a mildly injected throat and some cervical lymph adenopathy. The spinal fluid at this stage shows no abnormal changes. It is obvious that in the

absence of a specific test a diagnosis of poliomyelitis cannot be made in this stage.

It is important to keep in mind that poliomyelitis has its inception in this rather insidious manner; remembering this, the physician will not ignore such an illness during the summer and fall in the presence of an outbreak, but will continue to observe the patient for further eventualities.

If the disease is not abortive, it progresses to the second stage either without interruption, or after an interval of 12 to 48 hours during which the patient appears to have recovered, the so-called "dromedary" course.

In contrast to the first stage, this second stage is characterized by specific signs and symptoms which indicate extension to and involvement of the central nervous system by the infection. In the usual spinal type of poliomyelitis, the average degree of fever is 101 to 102°, and there is headache which is either frontal or diffuse. The patient is usually irritable, anxious and complains of pain in the back of the neck and along the back, particularly in the lumbar area. Often the patient is hypersensitive and complains of the weight of the bed clothing, or commonly, if it is an infant or child, does not like to be held by its mother. There may also be muscle pain and tenderness.

The physical examination discloses a patient quite ill and revealing a moderate to severe degree of prostration. The sensorium is only rarely impaired; in fact, the patient is usually very alert and responsive. Tremors of the extremities of various types may be noted. The face is usually flushed and frequently accompanied by a circumoral pallor. Diaphoresis may be marked. There may be slight or moderate injection of the pharynx with cervical lymphadenopathy. Otherwise the general physical examination is remarkable for the absence of significant findings.

A careful neuro-muscular examination is necessary to help establish a diagnosis. Slight or moderate neck rigidity is present with resistance to complete flexion of the head. A similar moderate back rigidity may be elicited with pain and resistance on attempting to flex the back completely. A head-drop is frequently present. The "spine sign" may also be observed when the child is asked to assume the sitting posture due to the rigid back. The Kernig and Brudzinski signs are inconstant.

At this stage muscle power is intact although some limitation of motion may be observed due to muscle tenderness. The reflex findings are extremely variable. The superficial reflexes, the abdominals and cremasterics, are either sluggish or absent. The deep tendon reflexes vary considerably. Early in the disease they are very often exaggerated, but as the illness progresses and nerve cell destruction occurs, the reflexes become sluggish and finally disappear. The significant reflex findings are: first, a change in the character of the reflexes between examinations, and second, an inequality of corresponding reflexes.

A spinal puncture must be performed in order to further aid in establishing a diagnosis. A "bloody tap" must be avoided to permit an accurate examination. In poliomyelitis the spinal fluid is usually under increased pressure and is clear or slightly hazy in appearance. The cell count is usually increased, averaging around 250 per c.mm., but may range from 10 to 1000, and these wide variations must be kept in mind. These cells are usually lymphocytes and mononuclears, although at times early in the disease polymorphonuclear cells will predominate. This polymorphonuclear pleocytosis is usually only temporary, for subsequent spinal punctures will disclose the predominance of lymphocytes and mononuclear cells. The albumin and globulin are both moderately increased; the sugar is normal; the fluid is sterile.

The third and final stage, the "paralytic stage," is characterized by continuation of fever, malaise, prostration, signs of meningeal irritation; but the outstanding and distinguishing feature of this stage is the appearance of weakness and paralysis which is flaccid in nature and is accompanied by diminution or loss of the corresponding reflexes. The paralysis is very variable; it may be limited to one muscle group or to the muscles of one extremity. On the other hand, there may be spotty and widespread weakness of varying muscle groups or there may be extensive and severe and more complete paralysis of most of the muscles of the body.

Following the appearance of paralysis, the temperature may drop rapidly and convalescence set in. However, the disease may not terminate so abruptly after the appearance of the initial paralysis. The paralysis may extend over a

period of days with eventual involvement of the muscles of respiration.

Convalescence is usually uneventful and may be prolonged, depending upon the degree and severity of motor nerve damage. Rarely, however, recrudescence of the infection may occur after one or two weeks of convalescence with return of acute symptoms and further progression of paralysis.

"Bulbar" and "encephalitic" poliomyelitis, a form in which the major seat of infection is in the brain and medulla, is less frequent than, and distinctly different, from the spinal type discussed above. The onset is more acute and the course more fulminating. The prodromal symptoms are frequently of very short duration and may be absent. The second stage of meningeal irritation is characterized by a higher temperature, usually 104 to 105°, a greater degree of prostration, extreme irritability and at times somnolence or stupor. Headache is usually more severe, and emesis may be marked. Evidence of meningeal irritation and of spinal muscle involvement are less apparent. Neck and back rigidity may be only slight in degree and at times completely absent. The spinal fluid usually discloses a relatively low cell count between 10 and 50, with a predominance of lymphocytes.

The further course of this form of poliomyelitis is characterized by involvement of various nuclei of the cerebral nerves. The common paralysis is that of the pharynx and palate with resultant inability to swallow and the collection of mucous in the throat of the patient. Involvement of the other cerebral nerves is reflected in ocular, facial, lingual paralysis, etc.

SUMMARY

Accurate diagnosis of acute anterior poliomyelitis depends on a complete history, a careful examination, and lumbar puncture.

Examination cannot be cursory, it must be deliberate.

A neuro-muscular examination must be performed. If any or all of the three common signs — stiff neck, rigid spine or ataxic tremor — can be demonstrated, a lumbar puncture should be done without delay.

The examination of the spinal fluid is reliable confirmation of the diagnosis before paralysis appears.

DIAGNOSIS AND MANAGEMENT OF EARLY TUBERCULOSIS

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Pulmonary tuberculosis is a serious disease; one which still causes more deaths among those in the productive years of life (25-45) than any other disease.

I think we can all agree that almost all cases of pulmonary tuberculosis at some time during the development of the disease were early or minimal cases and at that time should have had almost 100 per cent. chances of recovery.

How far they fall short of this result is shown by the nearly 4000 annual deaths from tuberculosis in Illinois alone.

The question to be discussed then appears to be "How is pulmonary tuberculosis to be found early enough to give the attending physician fair and proper opportunities to heal or arrest the tuberculous pathology in his patient?" and second, "What treatment is warranted or perhaps demanded to obtain such favorable results?"

The physician in general practice is, of course, the one who should see every potential case of tuberculosis before any other — this has always been and should always be. Any procedure planned or adopted for the discovery and for the subsequent treatment of tuberculosis should have the approval of local physicians and of organized medicine.

There are fundamental factors involved in the discovery of early cases of pulmonary tuberculosis which are such as have tended to eliminate the physician in general practice from the picture. This should not be true.

The average man in general practice rarely has the opportunity or the satisfaction of making a diagnosis of pulmonary tuberculosis in the early beginning stages confirmed, as early, by x-ray examination and by absence of tubercle bacilli in the sputum.

When the physician makes his diagnosis, it is usually after the disease has progressed into the moderately advanced or far advanced stage.

There are reasons for this — such reasons, as remove all question of criticism against the physician himself.

First of all it should be appreciated that it is

uncommon for symptoms to present themselves in the early stage of tuberculosis — true there are a few who present minor blood spitting or slight pleuritic pains, more often than not entirely overlooked as not sufficient in importance in the patient's opinion to warrant seeking medical advice. Then there are a small number who develop acute early lesions which enforce prompt medical attention, but by far the vast majority present no symptoms whatever, the lesion advancing more and more month by month until fatigue is noticed or vague digestive disturbances, slight hacking cough or loss of weight occur, when finally medical advice may be sought, the x-ray at this time most often demonstrating an advanced lesion in one or both lungs.

While we are speaking of x-ray, may we say at this point that rarely can one determine the true extent of a tuberculous lesion without the x-ray with proper technique and with efficient interpretation. One may be of the opinion that a lesion is early or minimal only to have the x-ray demonstrate more correctly a moderately or even a far advanced lesion.

The importance of this absence of symptoms may be stressed by quoting the findings in Massachusetts where over 400,000 students in schools of that state have been examined for tuberculosis.

Zack recently reported that there was on the average a period of three years between the x-ray demonstration of early pulmonary lesions and the development and appearance of symptoms.¹

In other words, then, the average physician is presented with a patient for diagnosis about three years after the pulmonary lesion began, even though the patient presents himself for study promptly when symptoms do occur.

It is then not to be wondered at that our institutions for the treatment of tuberculosis receive, on the average, only 15-17 per cent. of their patients in the early stages.

These facts indicate the problems involved in any control program, for it is axiomatic that control of tuberculosis by methods intended to restore health to those afflicted depends upon treatment of the early minimal lesion and not by treatment of advanced lesions after so large a part of the chances for recovery have all ready been lost.

The value to public health to be anticipated from the proper care of advanced cases is another story not discussed here.

Because of the problem outlined above indicating the usual lack of opportunity for the average physician to see an early minimal case of pulmonary tuberculosis, special methods of procedure have been developed intended to find the early cases.

Thus we find in this and other states annual surveys being made of high school and other groups; skin testing to determine those previously infected by tubercle bacilli and following this up by x-ray studies of all found to be infected to determine which, if any of the group, have developed demonstrable lesions.

What is the rational of this procedure? First it is felt that the serious or re-infection form of pulmonary tuberculosis or the chronic pulmonary tuberculosis we all think of, rarely develops in the lung before the early teen age, but that as the age of the group increases beyond fourteen, more persons develop early lesions so that it is now understood that about 85 per cent. of all cases of pulmonary tuberculosis have their beginning in the group between eighteen and thirty years of age.

Therefore it is logical to begin the search for beginning cases in the high school ages anticipating the discovery of a few cases each time such a large group is re-examined. Such re-examinations should therefore be made each year until each in the group passes the age of twenty-eight or thirty after which it is believed to be uncommon for a new case to develop among those whom the x-ray has proven at that age (28) to be free from demonstrable lesions.

While it is known that most pulmonary lesions of serious type, develop in persons after fourteen years of age, it is of course recognized that under proper conditions serious lesions develop before fourteen but excepting for infants these do not represent a large per cent. of the total. Where there is an unrecognized open case or positive sputum case of pulmonary tuberculosis in a family with young children or where the individual with positive sputum through ignorance or otherwise refuses to take such sanitary precautions as will protect infants or young children from repeated massive infections then serious forms of tuberculosis may and do develop in such youngsters with disastrous results.

That these are somewhat uncommon is shown by our State Department of Public Health reports which show for 1938 a total of 3995 deaths

from tuberculosis, all forms, of which 23 were in infants under one year of age, 25 of one year of age, dropping to twenty for those two years of age, 10 for those three years of age and to 6 for those four years of age. (These cover the entire state). It is interesting to note that of these 84 total deaths among children under five years of age, 68 or 80 per cent, occurred in Chicago, where one might expect certain economic groups to be living under sanitary conditions perhaps inferior to those in down state Illinois.

It would then appear that the tuberculosis problem as such is largely a matter of concern in that older age group in the teen ages and up to thirty years of age.

It should be pointed out here that such procedures for finding early cases of tuberculosis by skin testing large school and other groups and following this by x-raying those shown to be infected enjoys the approval of the medical profession at large and of the local community physicians in particular and such demonstrations should always be inaugurated with their approval and cooperation. Reports of positive diagnosis should always be furnished only to the family physician of the person involved.

What can the practicing physician do concerning the finding of early cases of tuberculosis aside from endorsing and cooperating in such large scale demonstrations referred to above?

First of all it should be stressed again that the family physician should be placed in a position where he may grasp the opportunity to see and care for early tuberculous lesions and there is no valid reason why any physician should not avail himself of such opportunity. First of all, of course, he should realize the possibility of a tuberculous infection in any of his cases whether or not there is a history of contact with a case of tuberculosis. He should, of course, always think of the probability of tuberculous infection in all those in whom the history shows contacts with others known to suffer or to have suffered from tuberculosis, and, with these and with those with no such history the truth regarding infection may be very simply discovered by giving or doing a Mantoux skin test. This skin test while simple does disclose the presence of tuberculous infection but does not indicate whether disease or active tuberculosis has resulted.

The test will tell him, however, those who should be studied further, including always x-

ray films taken with equipment which at least equals the minimum requirements for chest diagnosis ie 100 M.A. 1/10 sec. exposure and 6 ft. distance. X-ray films taken with equipment below standard show so much distortion or lack of detail that early lesions may be overlooked. It is equally important, however, that x-ray films should be interpreted by one whose experience in such matters entitles him to an opinion as to the findings.

The family physician may then easily and quite simply determine the presence or absence of tuberculous infection in every patient he sees, man, woman or child and from this point on determines first, what if any damage has been produced by such infection by taking or by having taken good x-ray films. In the case of an apparently healthy child under thirteen or fourteen years of age with a positive skin test the inferences of this finding directs him to the testing and x-ray of other members of that child's family to bring to light the person responsible for the infection of the child. The child may not need treatment only repeated x-ray studies from year to year. Surprising results follow such searches among the older members of the family. Chronic bronchitis may become what it really is — tuberculosis. Asthma may now become tuberculosis or the supposedly healthy grandmother may be discovered to have chronic fibroid tuberculosis with sputum positive for acid fast bacilli. What we are suggesting is a routine search for tuberculosis among all those we contact professionally. The discovery of early cases of tuberculosis would not be difficult if we all were looking for it instead of waiting for it to disclose itself later.

We have referred to the studies of high school students now being made in this and in other states; studies which result in the discovery of many unsuspected cases of tuberculosis. As a result of such studies we are informed of a fairly large group (about 18% of the total examined in our studies) who have been infected with tubercle bacilli and in whom x-ray studies disclose no active pathology. The families of these students should however, furnish us with a most important clue as to the source of their infection. All members of such families should be immediately examined for tuberculosis since it is entirely probable that some member will be

found who is responsible for the infection of the student.

Pomeroy³ has recently reported on "The Importance of Intensive Home Follow-up in Tuberculin Testing School Program" with the following results. In 1937-38 following 1429 positive skin tests with discovery of 14 active cases of tuberculosis the follow-up examinations in the homes, represented by the positive skin tests, revealed 18 additional active cases bringing the total to 32. In 1938-39 following 3194 positive skin tests discovered in the schools there were found 24 active cases. In the home follow-up there were found 53 additional cases making a total of seventy-four.

Pomeroy quotes Plunkett that "if a child reacts to tuberculin, the younger the child, the more likely it is that the infection occurred in the home."

Treatment: The importance of early prompt discovery of the beginning tuberculous lesion is vital if the individual is to have his best chances for recovery but the method of treatment of such individual is equally important. When it is recalled that diagnosis is possible on the average three years before symptoms make one suspect the presence of tuberculosis it is encumbrant upon us to so handle these early cases that recovery and arrest of the disease be accomplished while the patient is still symptomless and equally important, before open lesions develop and thus before acid fast bacilli are excreted to infect others in the family.

I think we can agree that most cases of tuberculosis were at one time minimal in extent and that the subsequent course of development depended either upon ignorance of its presence until it advanced or upon lack of energetic and prolonged treatment once the lesion was recognized.

Pulmonary tuberculosis even in the minimal or beginning stage is a very serious disease. This we may prove only by citing the thousands and thousands of deaths from tuberculosis among those whose minimal lesions were permitted to progress and progress to cause these deaths. Pulmonary tuberculosis is essentially a tuberculous pneumonia (even when there are no symptoms) but contrary to non-tuberculous pneumonia it is not self limited in its course and rarely clears or resolves entirely leaving behind a normal lung structure as does non-tuberculous pneumonia.

Not only is active tuberculosis a pneumonic process but the tubercle bacillus and its products have a definite destructive action on pulmonary tissue with the well known tendency to cavity formation with all the attending dangers and the subsequent difficulties in permanent healing of these cavities.

It would appear then, considering the difficulties to be anticipated in treating and healing the advance case of tuberculosis that our treatment of the early case even without symptoms should more nearly express our concern over the possible failure of the patient to check and thoroughly arrest the lesion while still early and while still symptomless.

We are not convinced, however, that the average early case when diagnosed is handled in this manner. Is allowing the early case the commonly permitted bathroom privileges a demonstration of our concern or fear that the disease may progress? Is allowing the early case the privilege of sitting at the dining table showing this concern?

So far as we now know rest is the only therapeutic measure of distinct value in the treatment of pulmonary tuberculosis. Do we show our concern when the routine mapped out for the patient fails to provide for the patient the maximum amount of the only effective weapon we have — rest?

It is, of course, thoroughly appreciated that strict bed rest alone in many cases of tuberculosis fails to check the disease and to finally produce arrest and that a large per cent. of our patients require some one or perhaps several of the surgical procedures now available to so place the lung at that degree of rest as will give nature the chance to effect and continue the healing process. In fact Chadwick & Evarts have just published² a paper on "Treatment of Pulmonary Tuberculosis in Adolescents" in which they reach the following conclusions "pneumo-thorax should be instituted as soon as possible after diagnosis is made even in minimal cases."

Following the experiences of Trudeau, Osler, Fliek, Bowditch and others some thirty years ago, the medical profession in many states, including Illinois, has recognized the valuable aid of the tuberculosis sanatorium.

Thus we find 22 municipal and county sanatoria operating in Illinois and in addition to these institutions there are 38 counties which

have voted upon themselves a special tax to raise funds with which to finance the care of their tuberculous in private and public sanatoria operated in other sections of the state. These institutions serve to stop the ever present dangers inherent in a communicable disease, afford each patient an opportunity to learn more clearly his individual responsibilities in our efforts to get him well, as well as, permit the attending physician a wider range of therapeutic methods in treatment.

It appears to be almost an impossibility to care for an open case of tuberculosis in the home without grave risk of this patient infecting other members of the family and should these members consist of one or more in the late teen ages or in the twenties then the danger becomes real that his disease will sooner or later be followed by active tuberculosis in one or more of his family.

The financing of a long drawn out illness, such as tuberculosis, is almost impossible for the average family, especially if the wage earner is the patient. Such patients deserve community help. It is hard to pin on the individual with tuberculosis all of the responsibilities for his disease. It has been well said that "tuberculosis is not caused by civilization but by the mistakes of civilization."

The tuberculosis sanatorium offers to the medical profession a valuable aid in his search for opportunities to further the interests of his patient.

The modern tuberculosis sanatorium today is instituting surgical rest to the lung by means of pneumo-thorax maintained at least two years or longer, by means of operations to sever adhesions which may be limiting the effects of pneumo-thorax, by means of thorocaplasty, partial or complete or even bilateral partials. All this and more, intended solely to put the lung at rest so that the healing process has a chance to continue and to finally arrest the disease.

When one sees a patient with advanced pulmonary tuberculosis one should ask himself these questions: "Was this patient discovered in the minimal stage? If so, was he or she given every opportunity to obtain all of the bed rest possible," and lastly, "How long was the strict bed rest continued?"

Somewhere the answers to these questions will explain why the case is now an advanced one.

What guides are safe to judge the arrest of early pulmonary tuberculosis? How long should bed rest continue?

It may be wise at this point to state that pulmonary tuberculosis is not healed in a few months. Those who demand evidence of great improvement or cure for their patients in short order, such as three to six months, are doomed to disappointment and I am afraid their patients to worse. Of all the causes for failure to retain gains already made or to obtain permanent arrest of tuberculosis, none are equal to the one cause — too short a period as strict bed patients.

Here is an early tuberculous pneumonia producing no temperature rise, no cough, no fatigue, no loss in weight and perhaps even no rise in the blood sedimentation rate and we wish to have a guide which will tell us when to begin giving him liberties or exercise. The answer is, of course, the x-ray appearances of the lesion.

Occasionally, one sees the lesion gradually clearing and finally disappearing entirely — this is uncommon — more often and as a rule considerable clearing and absorption does take place but fibrotic infiltrations develop to remain for years, and it is the presence of nothing but fibrosis that first indicates the healed or arrested pathology.

After fibrosis has occurred and there are no unhealed areas then exercise may be begun on the basis that now we do, in fact, have an arrested lesion and exercise is indicated.

It should be appreciated, we stress, that exercise is indicated because the pathology is arrested, not because exercise has any place in the treatment of a lesion not showing true arrest by fibrotic infiltration.

The guide then is the x-ray and this will entail repeated x-ray studies from time to time over a period of months and months showing, in the favorable cases, gradual clearing and absorption of the pneumonic process and the laying down and development of fibrotic strands. When the x-ray shows no further changes taking place as compared with previous films and nothing but fibrosis persists in the pictures then the disease is truly arrested and the exercise program is indicated and then only.

The hard part of the treatment of pulmonary tuberculosis is now ready to begin.

It is unfortunate that many months of time

and patience have been required to bring about the arrest of the disease and that our patient is so anxious to get back to his job, but improper handling at this time may upset and ruin all the advantages so far gained. Exercise is a poison to the tuberculous lesion and, as such, it must be prescribed in small, slowly increasing doses, always studying by frequent x-ray its effects on the pulmonary lesion. No satisfactory schedule can be arbitrarily laid down as a guide for the amounts and kinds of exercise to be prescribed for an arrested case of pulmonary tuberculosis but it is often customary to permit one bathroom privilege (on the same floor level) per day for one week, increasing one bathroom privilege each week, provided no untoward result appears. When full bathroom privileges are enjoyed, then begin dining room privileges in the same manner. It is understood that otherwise all of the patient's time is spent in bed. Upon completion of this schedule, to full bathroom and meals, other types of exercise may be added, such as washing dishes for fifteen minutes, increasing fifteen minutes per week with this or some similar type of exercise. It does not take so long to work up thus, carefully, to an hour of exercise daily after which each month should add another hour of exercise.

It is entirely probable that useful work is a better type of exercise than simple walking since our patients obtain more satisfaction as they observe useful things accomplished.

It should be anticipated that thus bringing our patient to full eight hours exercise daily without x-ray evidence of damage will warrant our patient returning to his eight hour employment and to economic usefulness, at which time we may have the satisfaction of a job well done and that is what we all desire. Therefore, after all this, it would seem to be common sense to carefully and frequently re-check these arrested cases of tuberculosis. Perhaps a couple of years or longer has been required to place the patient back at work. Considerable patience on his part as well as on ours has finally brought success. This success must not be jeopardized by an attitude of indifference on his part or upon our part. Each arrested case of pulmonary tuberculosis has yet to prove permanent arrest of his disease. It would be well to re-check by x-ray every three or four months for a year or two and afterwards every six months for another year or

two and after that re-check every year for an indefinite period of time. Upon evidence that all is not entirely well, it would be wise to forestall relapse or reactivation of the lesion by a lay-off from work for a short period if, by so doing, a prolonged illness may be avoided.

Summary: Every individual with tuberculosis should have the opportunity for diagnosis and treatment when the lesion is minimal. Every minimal lesion is potentially a far advanced fatal lesion and should be handled as such. All early lesions should be attacked with "all we have" at once, lest they be permitted to develop further to advanced disease. Early lesions may be discovered by x-ray examination only, and no other methods can check on their progress for better or for worse. The utmost in patience on the part of the patient and physician will bring success if persisted in long enough. Successful results in treating pulmonary tuberculosis challenges the skill and resources of each physician.

BIBLIOGRAPHY

1. Zacks, David. Pulmonary tuberculosis in the second decade of life. *American Review of Tuberculosis*, 39: 692, 1939.
2. Chadwick, Henry D. and Evarts, Helen W. Treatment of Pulmonary Tuberculosis in Adolescents. *American Review of Tuberculosis*, 41: 307, 1940.
3. Pomeroy, J. L. *J. A. M. A.* 114: 1949, 1940.

PREGNANCY AND TUBERCULOSIS

FRED M. MEIXNER, M.D.

PEORIA

The private physician is still the keystone of the tuberculosis problem and in the final analysis, his is the responsibility for the control of the spread of the disease. It also remains for him to allay the morbid fears of the patient's family and to give expert advice, mental comfort and happiness and a personal decision when particular emergencies arise in the conduct of the case of tuberculosis.

One of these emergencies likely to occur is pregnancy and the family physician should have a definite and logical course of procedure to follow when it occurs. The conclusions reached by reading the medical articles published in the past thirty years, both from general practitioners and specialists, shows that there is still a wide divergence of opinion, seemingly amply supported by statistics of the observers, as to the proper

course of procedure when pregnancy and tuberculosis both are present. Some eminent men lean toward an active attitude, favoring interference by abortion in all cases of tuberculosis of the lungs, regardless of the type of disease, while others equally eminent, feel that the risk of pregnancy for a tuberculous woman is no greater, if properly treated, than for the non-tuberculous pregnant patient.

There is no doubt that the conduct of pregnant tuberculosis cases, based upon the extreme views expressed by the latter group, has been responsible for a lamentable sacrifice of human life, although with the progress of collapse therapy and early diagnosis the pessimism has not been as fully warranted as previously, and much of the harm that might have befallen these patients has been averted.

Skillen and Bogen recently reviewed the relationship between pregnancy and tuberculosis and quote the study of a group of 140 pregnant tuberculous animals at Olive View Sanatorium which showed about the same average amount of disease in pregnant guinea pigs as the controls.

If the raised diaphragm, analogous to that produced by pneumoperitoneum, had a beneficial effect by producing pulmonary collapse, it would be expected that this effect would be manifested particularly in animals infected by inhalation and not in those with abdominal infection from subcutaneous injection. In the experiment of Skillen and Bogen no such difference was observed.

Steinback in discussing the effect of lactation says that if the drainage of the mother's system by lactation was the important factor, as has been suggested, removing the young at birth should have a beneficial effect and wet nursing an ill effect. Experimentally, tuberculous guinea pigs given excess progeny to nurse showed a slightly higher mortality rate, but the extent of the tuberculous lesions observed in these animals was no greater than that in the controls or in those whose young were removed.

The fact that the rate of death from tuberculosis is higher for young women between the ages of 15 and 30 than for other females or for young men of the same ages has been ascribed in part to increased susceptibility resulting from pregnancy, according to Norris. Arnold states that a study of vital statistics indicates that the

difference is not constant, being marked years before pregnancies may be expected to occur but disappearing when the child-bearing period is only half completed. Analysis of the records of death among young women in New York City from tuberculosis reveals rather an infrequency of pregnancies in the group involved. More intensive study on the subjects concerned shows an incidence of intimate contact and massive exposure, as in the case of a nurse or personal attendant on a consumptive, which may account for the difference.

Skillen and Bogen after their study of patients at Olive View, conclude that the direct physiologic effect of pregnancy, parturition and lactation may actually represent a minor aspect of the real problem. One of the most important factors in the treatment of pulmonary tuberculosis is rest. It is almost impossible to induce many mothers to take the amount of rest required for their condition, and particularly to leave their children and go to a sanatorium for the treatment they require. Other therapeutic factors are also closely linked with the economic situation of the patient. If the added expense of bearing and caring for a child means that the mother will be deprived of adequate food, rest and medical care, it cannot be lightly incurred. Adequate economic aid, however, may often safeguard the mother even better than interference with pregnancy.

The treatment of tuberculosis in a pregnant woman should not be interrupted by the pregnancy. Pregnancy proceeding to successful delivery and recovery while the lung remains collapsed under artificial pneumothorax, phrenic interruption or even thoracoplasty is by no means unusual today. A recurrence developing after delivery occurs in only a few of properly managed cases.

The age of the patient, the stage of the disease and the type of the lesion have a distinct bearing on the prognosis. Unfortunately it is not clear just what we mean by the term "stage of the disease" and there is no clear definition of the type of lesion" leaving room for considerable leeway in interpretation. The treatment would be quite different in a patient with a chronic fibroid or cavitation type of disease, with only a short expectancy of life, than it would be in a young woman in early pregnancy with a very active infiltrating and exudating lesion. It has

been repeatedly stated that tuberculous women may enjoy a temporary remission of the disease during pregnancy, only to relapse with increased activity after parturition.

The avoidance of pregnancy is the most important primary consideration for patient and physician. No woman who has active tuberculosis should consider pregnancy for at least two years after complete arrest of her tuberculosis, or even longer if the treatment required to heal the lesion was difficult, or if there is even the slightest doubt in the mind of her physician. The diagnosis of arrest must be based on a very careful study of the entire progress of the case and not be arrived at casually. Also, every available diagnostic aid must be used, resolving any doubt against pregnancy. Many tuberculous patients appear to improve throughout pregnancy, only to show a decided tendency toward aggravation of a mild lesion or activation of a dormant tuberculosis the first few months after delivery. This type of case is especially hard to prognosticate and should be sufficient reason alone for forbidding pregnancy.

If pregnancy has taken place in a tuberculous woman, there are two courses that can be followed, requiring the closest study and keenest judgment for a decision as to the proper course treatment must pursue. One is to interrupt the pregnancy, then devote all and every modern method to cure her. When the cure of her tuberculosis is complete then, and then only, let her bear children. The other is to immediately place the patient in a tuberculosis sanatorium for observation, from six weeks to three months. (It is better to interfere too soon than too late). If improvement is satisfactory, the lesion is found to be minimal, and the sedimentation test satisfactory, the case may be allowed to go on, using collapse therapy and all other means indicated to control the tuberculosis. If the tuberculous condition grows worse, interruption of pregnancy is indicated immediately, preferably before the end of the second month, followed by active tuberculosis therapy.

The secondary question, then, to decide in the presence of tuberculosis and pregnancy can be stated thus: Is therapeutic abortion justified in tuberculosis? After reading the voluminous articles and reports of innumerable investigators, the widely divergent views of the writers seem irreconcilable, but on careful study the general

principles that apply become very simple — more simple than trying to reduce them to print.

In some cases, particularly advanced active cases, abortion acts as a stimulus to the chest lesion, and non-interference is preferable, especially if it is felt after careful observation that abortion will mean death for both mother and child, while allowing progress of the pregnancy may mean death of the mother, thus sacrificing everything for a live child. Early induction of labor and forceps delivery may be indicated. With collapse therapy, even these apparently hopeless cases can often be carried through a normal pregnancy and delivery, treatment being continued after delivery. By doing phrenectomy or phrenic crushing and using greater than usual pressure, by pneumothorax, and, in selected cases, holding the diaphragm by use of pneumoperitoneum after delivery, the prognosis is materially improved. The efficacy of collapse therapy may limit the indications for therapeutic abortion in this type of case.

It may be stated as a general rule, however, that in most cases of tuberculosis, it is best to remove the pregnancy and let the woman have all her facilities for conquering the tuberculosis. Then, after the danger from tuberculosis is past, let her produce the offspring she desires. In other cases, as stated above, a rather large group becoming larger as a result of early diagnosis and collapse therapy, and selected by careful observation, with the patient constantly under good sanatorium treatment we may preserve the fetus, and therapeutic abortion may be withheld. Artificial pneumothorax often brings an active lesion under control and pregnancy may proceed without complication. Moreover, if the lesion is well collapsed, it is not usually necessary to separate the mother and infant after delivery to prevent infection of the infant from the mother.

The question of pregnancy and tuberculosis needs the closest cooperation and study, not only by those who practice the treatment of tuberculosis, but by obstetricians and internists, to the end that the lives of the mothers may be preserved, their health conserved, and the lives of a large number of infants saved.

With a better and more intelligent understanding of the problem on the part of the tuberculosis specialist and the obstetrician, the pregnant tuberculous patient may emerge from her pregnancy experience (once looked upon as a

most dangerous and unjustifiable happening) almost, if not quite as safely as the non-tuberculous woman.

In none of these patients should lactation be permitted, as it increases the hazard for the mother by using her recuperative and healing powers for the production of milk. This viewpoint differs from that of Steinback quoted above. Where the case is open, there is great danger to the infant who is apt to acquire a tuberculous infection from the mother.

In the decision to interfere by abortion the social aspect must also be considered, because in many instances a woman would be unable to take care of her child and her home surroundings would not be proper for the welfare of the baby, which makes it necessary to terminate. The problem here, like the entire problem of tuberculosis, is not only medical but social. The religious aspect of the problem is purposely omitted from this discussion, but must be born in mind when outlining treatment for any given case.

The adoption of a universal practice of tuberculin testing all pregnant women, with x-raying of the reactors for active tuberculosis should be encouraged, and as voluntary tuberculin testing becomes more universal, spreading this campaign to the young adults, will mark a definite progress toward the prevention of this obstetric complication.

Irwin, says that, "in spite of experimental data on animals, pregnancy does constitute a serious drain on the tuberculous mother. The fact that she gains weight and looks better during pregnancy is misleading to the clinician and constitutes one of the most puzzling phenomena in clinical medicine. There is something that carries the chronically ill and doomed woman through pregnancy until her function with regard to propagation of the species has been fulfilled and then allows her to die, sometimes quickly. Had this phenomenon not been observed in the woman afflicted with cancer, diabetes and pernicious anemia, I would be inclined to believe that in the case of tuberculosis it is due to a gradually increasing partial collapse effect of the pregnant uterus. The rapid invasion of the disease shortly after delivery could certainly be explained by the sudden relief of the pressure allowing the lung to expand. This, then, suggests a definite indication for

collapse therapy in the first few hours or days after delivery of the active, tuberculous woman who goes to or near full term pregnancy. Opinion as to proper procedure and treatment, I believe, now lies in the middle course. The improvement in the treatment of pulmonary tuberculosis by surgical means, added to the old rest and fresh air treatment, has changed the picture almost completely. The tuberculous patient who is seen for the first time in early pregnancy should be examined carefully by the phthisiologist for activity, and his advice should be followed after observation of the patient for a short time."

One of the more recent methods to be employed in interrupting pregnancies is the x-ray technique for therapeutic abortion, which has a distinct value in pregnant tuberculous patients. Mayer, Harris, and Wimpfheimer at Mt. Sinai Hospital recently published their experience with x-ray as the means of inducing abortion and this seems an ideal method to use in tuberculous cases. After a consultation between the gynecologist, the radiologist and the phthisiologist, in which the question of intervention and method are decided upon, the patient is informed of the possibility of a permanent amenorrhea, a condition not wholly undesirable in a tuberculous patient.

The period of amenorrhea after treatment is very variable. In general it can be stated that in almost all of the patients below the age of 25 it is only temporary for from one to forty-eight months. In the age group twenty-five to thirty about one half remain amenorrheic, and as the age advances more reach a permanent menopausal point. In no case can menstruation be certainly forecast and a majority of the patients have some menopausal symptoms. If menopausal symptoms occur, they are usually mild and can be controlled by ovarian extract. After treatment, the patient usually aborts spontaneously, customarily in 19 to 35 days, with only slight bleeding. Convalescence is quite uniformly uneventful. On discharge, the patients are given contraceptive instructions, although the treatment can be repeated, if pregnancy ensues.

Briefly, the principles to be followed in the tuberculous pregnant woman can be stated under the following items.

First, no one has shown definitely that pregnancy is good for the health of a tuberculous

woman in any stage or type of tuberculosis. A neutral effect of pregnancy on a tuberculous lesion is not asked — the risks are too great.

Second, most investigators, easily 75 per cent. believe that pregnancy aggravates tuberculosis, while no one has proved that abortion properly performed, aggravates an early quiescent or arrested lesion, if proper tuberculosis therapy is followed afterwards.

Third, every one admits that pregnancy places a severe strain on a tuberculous woman's resources and strength, and that labor is fraught with immediate and remote perils.

Fourth, after labor or abortion, treatment for the chest condition should be carried on vigorously, treatment must be continued over sufficient time to guarantee arrest and should not be discontinued too early — in any event — only after very careful observation and study by an experienced phthisiotherapist. Subsequent pregnancies should be allowed only after careful study of the case has shown the chest lesion completely arrested or under complete control.

Sixth, therapeutic abortion should be done as early as possible when decided upon, preferably under spinal or epival anesthesia, but after the fourth month of gestation the effect of intervention is comparable to a full term delivery. With proper collateral care in cases that have not shown an acute flare up earlier, the risk can be safely assumed, the physician being ready to interfere as soon as labor starts, so as to terminate it rapidly, as by forceps, sparing the patient the stress of inhalation anesthetics.

HEPARIN FOR THROMBOSIS

Several methods have been developed for the administration of heparin. There are essentially only two methods that are useful in treating hospital patients. First, the Swedish clinicians have given up the administration of heparin by the continuous intravenous drip method and are now resorting to the injection of heparin solutions every two or three hours, keeping up the injections for from four to six days. Crafoord treats most of his cases in this way, giving about 50 mgms. of heparin (approximately 5,000 units) every two hours, for four to five days post-operatively. By this method the clotting time is raised quickly from a normal of four to five minutes to from fifteen to twenty-eight minutes. Two hours after the injection the clotting time has usually returned to normal. It will be understood that there will be a great variation in the clotting time of patients treated in this way.—
EVANS, Virginia, M. Monthly, April '41.

RESULTS IN THE TREATMENT OF PULMONARY TUBERCULOSIS

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CHICAGO

Most phthisiologists are now convinced that collapse of the diseased lung is a specific remedy for pulmonary tuberculosis. They know that where this can be completely accomplished healing will nearly always follow. Whereas fifteen years ago it was felt that not more than fifteen to twenty per cent. of patients were amenable to this form of treatment, today in the better sanatoria the figure has risen to between forty and eighty.

This wide acceptance and extensive use of the procedures has been so recent that, in a disease which is always so questionably controlled, only today can one begin to evaluate results and estimate the importance of the new therapy.

The present paper is a study of the current status of six hundred patients suffering from pulmonary tuberculosis who were in residence in Edward Sanatorium between January, 1932, and December, 1937. This group seems especially worth studying because throughout this period those in charge of their care have been convinced of the value of collapse therapy and have used it at least to the limit of its effectiveness. The indications have varied from year to year as increased experience has directed, but throughout the period no patient, providing he had sufficient uninvolved lung to support life, has been permitted to grow worse or to remain for more than a few months in a stationary and chronic condition without some attempt being made to collapse the diseased lung areas. Phrenic nerve block and artificial pneumothorax, the minor and safe procedures, have been used on some cases which might have recovered without them, sometimes because open cavities and the nature of the lesions threatened extension of the disease and in other cases to hasten and assure recovery and to avoid the economic and psychological ravages of prolonged invalidism. The major surgical operations have been resorted to only when all simpler measures have been thoroughly tried and when experience has shown that without them recovery was impossible. A too careful consideration of statistics has not withheld their application from desperate cases which might

have been and often were thus saved and restored to health. A successful thoracoplasty was performed on one patient who was sixty-nine years old.

This group is of particular interest also because there was no selection of cases. Every patient who applied for admission to the Sanatorium was accepted, regardless of the extent or stage of his disease and of the prognosis. Sixty-two were classed as hopeless at the time of admission and thirty-four died in less than a month after entering the Sanatorium. Ninety-two had such extensive disease that any form of collapse therapy was out of the question.

The statistics are especially valuable because of the completeness of the follow-up records. Only six of the six hundred cases have not been followed.

Not all of the patients can be said to have been treated at the Sanatorium. In a private sanatorium in a large metropolitan area many patients enter pending their admission to a public institution and some few others leave because of homesickness or dissatisfaction. Only four hundred forty-nine remained in the institution for a period of six months or more or were discharged with their disease arrested before this time.

The Treatment. If modern treatment is more radical surgically, it is also more radical medically. The idea of a tuberculosis sanatorium as a resort where chronically ill individuals lead a pleasant ambulatory existence is no longer correct. All patients with curable disease are kept on strict bed rest until the sputum has become negative and the x-ray shows no further improvement. Strict bed rest means being in bed twenty-four hours a day and sixty minutes an hour. Those with fever or acute disease are kept in single rooms to spare them the exertion of talking and laughing.

Heretofore the tendency has been to undertreat tuberculosis. Today one plans to overtreat it. Formerly as soon as a patient was afebrile he was put on graduated exercise. Today he is kept in bed until his disease is safely encapsulated. When he is ready for exercise he is ready to go home.

Because the possibility of reversing unfavorable progress is so great, close observation of the patients is essential. Each has an x-ray and sputum examination at least once a month. In

acute cases the interval between x-rays is reduced to one or two weeks. Spread of the disease or prolonged failure to improve are indications for more complete rest and often for more effective collapse. If a patient with curable tuberculosis grows worse while under observation the physician must blame himself and must act quickly.

What is Meant by a Cure. The modern more radical and thorough treatment of tuberculosis has resulted in a different type of cure. The idea that a person who has had the disease must thereafter consider himself a chronic invalid is no longer correct. It is not necessary for him to change his work or his residence or to alter his plans or curb his ambitions. The patients who are listed as cured in this report have in nearly every instance gone back to their former occupations and are leading normal lives. Business men have returned to their offices, factory workers to their benches, medical students to their classes, internships and practices, young women have been advised to marry, and married women to have children. The only restrictions which have been placed upon them have been to avoid strenuous exercise and to lead normal lives, in contradistinction to the abnormal existences which so many of us follow. Follow-up examinations are recommended once each six months. If the tuberculosis does recur, as it will in an occasional case, it is very important that it be found in its early stages. In many instances the return to work is considered as a test of the security of the cure. If a patient who has recovered without phrenicectomy or artificial pneumothorax or thoracoplasty breaks down under conditions of normal living, this recurrence is interpreted merely as an indication for the type of collapse which might have been used originally but which the patient had a good change of avoiding.

The Results. Of the 600 cases 61 or 9.8% had minimal involvement; 218 or 36% had moderately advanced; and 324 or 54% far advanced disease.

These figures indicate what statistics on tuberculosis have always indicated, that the great problem in the control and treatment of the disease is that of early diagnosis. In spite of the fact that this has been preached and emphasized since Robert Koch first demonstrated its importance in the control of tuberculosis, most cases still are first recognized months or years after

the onset, when their chances for recovery are compromised and they have already transmitted the infection to their families and friends. In a series of one hundred consecutive cases at Edward Sanatorium it was found that there was an average interval of four months between the appearance of the first symptoms and the first consultation with a physician. The average interval between the first consultation and the arrival at a diagnosis was ten months. In nearly every instance the date of the diagnosis coincided with that of the first x-ray examination.

Results in the Minimal Cases. Of the 61 minimal cases 59 or 95% are well. There were no deaths from tuberculosis. One patient died of coronary thrombosis four years after recovery and another who transferred to a public institution at the end of four months has become worse and is still ill.

Minimal pulmonary tuberculosis can be cured simply and almost certainly. A period of six months of bed rest followed by six months of a lazy ambulatory existence will nearly always suffice. The use of artificial pneumothorax is safe and can greatly shorten the period of disability. At Edward Sanatorium it is used only when economic considerations require an early return to work. All have made complete recoveries without important complications. In considering pneumothorax for minimal lesions it must be borne in mind that the complications of the treatment are in proportion to the extent of the disease and that in minimal disease they are minimal.

Results in Moderately Advanced Cases. Of 214 moderately advanced cases 177 or 83% are well, 21 or 10% died of tuberculosis, and 4 or 2% died of other disease after recovery from tuberculosis, and 12 or 5% are still sick with tuberculosis.

Of the 214 cases, 173 remained in the Sanatorium for six months or more or were discharged on advice in a shorter period. Only these cases can be said to have had their treatment at the Sanatorium or under its supervision. The results in these 173 cases are shown in the following table.

	No.	%
Well	154	89
Died of tuberculosis	7	4
Died of other diseases	4	2
Sick with tuberculosis	8	5
Total	173	100

Patients with moderately advanced tuberculosis should always recover unless they experience unpreventable and uncontrollable accidents or have such complications as severe enteritis or bronchial tuberculosis which are not amenable to treatment. A phthisiologist should feel himself obligated to explain his failure to cure any case of moderately advanced disease. By definition the patients have sufficient normal lung to support life. By one means or another, if they will not recover more simply, successful collapse of the diseased areas should be accomplished and healing secured.

Of the 7 patients who died, 3 had bronchial or tracheal obstruction, 2 developed miliary tuberculosis, 1 woman fifty-six years old died several months following a thoracoplasty, and one patient with severe pneumoconiosis died of extension of tuberculosis four years after apparent arrest of his original disease.

Of the 8 who are still ill, 5 have had recurrences after passing from under our care; one with a basal cavity is to have a thoracoplasty, one has had a minimal extension to the opposite lung and another with a bad family history and no apparent resistance still has a positive sputum in spite of adequate bilateral collapse.

The Results in Far Advanced Tuberculosis. Whereas in minimal tuberculosis the chances for recovery approach 100%, and in moderately advanced disease they are well over 90%, in far advanced phthisis the outlook is much less favorable. In this group one encounters in the disease the terrible and final potentialities. Many patients are moribund when they seek treatment. Many others have such large cavities, such extensive involvement and such severe complications that at a glance one can say that recovery is impossible. In many, a low vital capacity precludes attempts at collapse and in others there is not sufficient normal lung to support life were the diseased areas put out of function. On the other hand, in this group many have so favorable a prognosis that one cannot consider a diagnosis of far advanced tuberculosis as connoting always a gloomy outlook.

Of the 323 far advanced cases, 134 or 41% are well; 154 or 48% died of tuberculosis; 4 or 1% died of other diseases, and 31 or 10% are still sick with tuberculosis.

Of the 154 who died, 62 were classed as hopeless on admission. Thirty-four died within a

month of entering the Sanatorium. Ninety-two had too much disease to permit the use of any collapse measures.

Of the 323 far advanced cases, 221 stayed under our care for six months or more or were discharged on advice after a shorter sojourn. The results in these cases are shown in the following table:

	No.	%
Well	107	48
Died of tuberculosis	101	46
Died of other diseases	4	2
Sick with tuberculosis	9	4
Total	221	100

Of the 101 cases who died of tuberculosis, 58 or 59% were classed as hopeless at the time of admission. Thirty-four died within a month of entering the Sanatorium.

Combined Results. The combined results in the whole group of 600 cases are shown in the following table:

	No.	%
Well	370	62
Died of tuberculosis	175	29
Died of other diseases	9	2
Sick with tuberculosis	44	7
Unknown	2	0
Total	600	100

Of the 449 cases who remained under our care for six months or more or who were discharged dead or on advice before this time, the results are as follows:

	No.	%
Well	314	70
Died of tuberculosis	108	24
Died of other diseases	9	2
Sick with tuberculosis	17	4
Unknown	1	0
Total	449	100

COMPARISON OF MODERN RESULTS WITH THOSE
OBTAINED BEFORE ERA OF EXTENSIVE USE
OF COLLAPSE THERAPY

In 1938 Drolet published statistics showing that the recent increase in the use of collapse therapy had not altered the general death rate from pulmonary tuberculosis. This article was hailed by many of the older and more conservative phthisiologists as a vindication of their skepticism, and throughout the profession cast some doubt upon the value of the new measures. While no intelligent phthisiologist doubts their value and although many statistical studies have shown that the results in cases treated by collapse were far superior to those in cases untreated, Decker's publication again shifted the

burden of proof upon those advocating the newer procedures.

In 1931 a survey was made to determine the current condition of patients resident in Edward Sanatorium in 1925. During this year patients were treated by partial rest, collapse measures were used on only 10 of the 209 patients. The results of these 209 patients are shown in the following table:

	No.	%
Well	55	27
Died	108	51
Sick with tuberculosis	13	6
Unknown	33	16
Total	209	100

A comparison of the 1925 and the 1937 results is shown in the following tables. The results in the 1925 cases are listed as of 1931.

MINIMAL CASES

	1925	1932-1937
	%	%
Well	59	96
Dead	9	2.5
Sick with tuberculosis	9	2.5
Unknown	23	0

MODERATELY ADVANCED CASES

	1925	1932-1937
	%	%
Well	45	83
Dead	31	12
Sick with tuberculosis	0	5
Unknown	24	0

FAR ADVANCED CASES

	1925	1932-1937
	%	%
Well	15	41
Dead	65	49
Sick with tuberculosis	8	10
Unknown	12	0

An interpretation of the comparative results as evidence in favor of the more radical treatment of tuberculosis might be criticized on the grounds that in the more recent group the follow up has been more complete. It might be argued that the earlier figures would be much better had the 1931 condition of the unfollowed cases been known. That this criticism is not warranted is shown by a comparison of the percentage in the two groups who are known to have died. Nine per cent. of the minimal cases in the 1925 group were dead in 1931 as compared with 2.5% in the 1932-1937 group who were dead in 1940. Thirty-one per cent. of the moderately advanced cases of the 1925 group were dead in 1931 as compared with 12% of the 1932-1937 group. Sixty-five per cent. of the far advanced cases of the 1925 group were dead as compared with the 48% of the 1932-1937 group.

COLLAPSE THERAPY

Three hundred and sixty-four or 60% of the 600 cases had some form of collapse therapy. One hundred and five or 17% were considered to have too little disease to warrant collapse; ninety-two or 15% had too much disease; and 39 stayed in the Sanatorium too short a time for any decision to be made.

The percentage of cases treated by collapse therapy varied somewhat from year to year. The percentages for each year are shown in the following table:

	No. of cases	With Collapse	%
1932	122	58	48
1933	81	46	57
1934	83	53	64
1935	80	50	63
1936	107	78	73
1937	127	79	62

The results in those who had collapse therapy, those who had too little disease and those who had too much disease are shown in the following table:

With Collapse Therapy		
Well	Dead	Sick
261	78	25
Too Little Disease for Collapse Therapy		
Well	Dead	Sick
99	6	0
Too Much Disease for Collapse Therapy		
Well	Dead	Sick
2	84	6

The number of times each of the procedures was used is shown in the following table:

Phrenic Nerve Operations	170
Artificial Pneumothorax	253
Internal Pneumolysis	27
Paraffin Pack	26
Thoracoplasty	66
Extrapleural Pneumothorax	4

At the present time phrenicectomy is employed less frequently, while improvements in the technique of internal pneumolysis have raised the incidence of this operation; and the development of extrapleural pneumothorax has relegated paraffin pack to a very minor position. In the technique of and indications for the different procedures there is still an active evolution so that one's practice today differs materially from that of last year and the years before.

Results in Collapse Therapy. In a paper which aims merely to give a general picture of the results of the modern treatment of tuberculosis, a detailed analysis of the various collapse measures is superfluous. These will be the subjects of supplementary reports. At the present time it seems advisable to limit the discussion to a simple statement of the statistics.

PHRENIC NERVE OPERATIONS:

During the years covered by this report, phrenicectomy and phrenic nerve block were used for the variety of purposes. In many instances they were employed as palliative or preparatory operations, or to terminate a pneumothorax, or as rather hopeless gestures in cases in which no other treatment was feasible. Even in cases in which it was hoped that they would be sufficient, they were always considered as trial measures and were persisted in only as long as improvement was progressive. During the earlier years the permanent operation was the rule; today, in order to preserve vital capacity in case apical thoracoplasty or centralateral pneumothorax becomes necessary, the temporary operation is usually performed. The operation was not used in minimal cases.

Of the 170 patients upon whom it was performed, 66 recovered without further interference. There were no operative or late deaths and no complications.

ARTIFICIAL PNEUMOTHORAX

Artificial pneumothorax was used on 253 patients. In 167 instances the collapse was satisfactory and the sputum rendered negative. In some cases a successful collapse of the better lung was obtained to prepare it for eventual thoracoplasty on the worse side. Often in acute cases and pneumonic cases, a rapidly progressing and excavating process was controlled and the patient rendered fit for some surgical collapse. The results in the 167 cases in which the collapse was effective are shown in the following table:

	No.	%
Well	158	95
Dead	4	2
Sick	5	3
Total	167	100

The Complications of Artificial Pneumothorax. The important complications of artificial pneumothorax are air embolism, spontaneous tension pneumothorax, tuberculous empyema, and secondarily infected empyema. Air embolism is so rare as not to be important, and treatment of the others has recently become so simple and successful that they are now little to be dreaded. Their incidence is in proportion to the extent and seriousness of the tuberculosis. In this series there were no important complications in

minimal cases and no deaths attributable to them in the moderately advanced cases.

Today tuberculous empyema can usually be controlled by multiple aspirations, irrigations and instillations of cod liver oil. Thoracoplasty is rarely required. Secondarily infected empyema, which used always to call for drainage and thoracoplasty, now is almost regularly amenable to multiple aspirations and irrigation, and spontaneous pneumothorax can be simply controlled by leaving a fine trochar connected with a water bottle in position for twelve to twenty-four hours. During the past three years there have been no deaths attributable to artificial pneumothorax.

During the period covered by this report there were eight deaths from the complications of artificial pneumothorax. These are listed in the following table:

Spontaneous pneumothorax	4
Tuberculous empyema	0
Secondarily infected empyema	3
Air embolism	1
Total	8

All of these deaths occurred in extremely far advanced cases. The three from secondarily infected empyema took place before aspiration and irrigation had been proved effective and all had such extensive disease in the opposite lung that the then current treatment by drainage and thoracoplasty could not be considered.

INTRAPLEURAL PNEUMOLYSIS

Intrapleural pneumolysis was used so infrequently during the years covered by this report that a true picture of it is not afforded. The instruments for performing it have been so improved and skill in using them so increased that today it is being employed more and more frequently on more and more difficult cases and with increasingly better results. Designed simply to make effective an ineffective pneumothorax, its success can be judged only on the basis of its so improving the collapse that the sputum is rendered negative.

The results are shown in the following table:

Successful	16
Unsuccessful	11
Mortality	0
Total	27

PARAFFIN PACK

Edward Sanatorium is one of the few clinics in the United States in which paraffin pack

has been regularly employed in the treatment of selected cases. Most American surgeons discarded it without a trial on the basis that an operation which included the use of so large an amount of foreign material was unsurgical and could not be valuable. We first employed it in a case in which all other methods of collapse were impossible or strongly contraindicated. Success in this instance led to continuation of its use, and throughout the period covered by this report it was a regular part of the armamentarium. It was then the only means of securing a strictly local collapse of a diseased lung area without seriously impairing the vital capacity. It was used in cases in which low vital capacity, age, or poor general condition contraindicated thoracoplasty; as an alternative to thoracoplasty where this operation seemed more destructive than the lesion warranted; and as a preliminary to thoracoplasty when the size of the cavity suggested that thoracoplasty alone would not be effective.

All in all, the experience was favorable. The complications which had been anticipated either did not develop or were found not to be serious. In the 27 cases there were no operative deaths. In no instance was there infection of the wound or about the pack. In no case did the pack slip out of position. The only complication encountered was perforation of the paraffin into the lung. When this occurred, it was always many months after the operation and always in cases with large cavities. In no case was this, of itself, a serious incident. Fever or the stormy symptoms of acute infection did not develop. The incident was considered as an indication for removing the paraffin and performing a thoracoplasty and this was done successfully and uneventfully in all instances save one. In one patient with a large cavity, extensive disease in the opposite lung, and severe asthma, perforation occurred eight months after the operation. The patient was so short of breath from tuberculosis and asthma that Thoracoplasty could not be performed. Death followed simple removal of the pack.

The results in the 26 cases are shown in the

following table:

Pack Alone		
	No.	%
Well	11	73.3
Operative death	0	00.0
Died later of tuberculosis	2	13.3
Died later of other diseases	1	6.7
Sick with tuberculosis	1	6.7
Total	15	100.0
Pack Followed by Thoracoplasty		
	No.	%
Well	8	73
Operative death	0	0
Died later of tuberculosis	2	18
Died later of other diseases	1	9
Sick with tuberculosis	0	0
Total	11	100

Considering as favorable results those patients whose sputum was rendered negative but who died later of other diseases, the operation was successful and has continued successful in approximately 80% of cases.

Today it is rarely used. Extrapleural pneumothorax appears to have the same advantages and avoids the drawbacks incident to the foreign body. The Semb apicolysis appears to have made the pack unnecessary as an operation preliminary to thoracoplasty.

THORACOPLASTY

Over the period covered by this report, thoracoplasty, although an old operation, underwent an important evolution. The simple Wilma-Sauerbruch columnar resection was found in too many instances to give an ineffective collapse and gradually the early demand of Brauer, that the collapse from thoracoplasty must be as complete as that afforded by a good pneumothorax, came to be appreciated and acted upon. The standard operation now includes removal of the entirety of the upper three ribs and extremely long segments of the others, avulsion of the neck of the ribs to the spinal articulations, resection of the transverse processes and extrafacial mobilization of the apex of the lung. Treatment of the peritosteum of the upper ribs with Zenker's solution or some other fixative to prevent or delay regeneration is more regularly employed. These changes have made the operation more difficult to perform, but have proved their value by increasing the percentage of cures from 40 to 80.

To decrease the shock incident to the more radical resection we have revived and developed a muscle splitting approach to the ribs which we first described in 1938. Through these separate and short non-traumatizing incisions, it is

now possible to remove adequate segments of the ribs and secure as good a collapse as can be obtained by the parascapular and paravertebral transecting incisions.

Thoracoplasties have been performed upon 66 patients. Five of these were done at other institutions by other surgeons and sixty-one at the Sanatorium. The results in these cases are shown in the following table:

Operated Upon Elsewhere		
	No.	%
Well	3	60
Operative death	2	40
Total	5	100
Operated Upon at Sanatorium		
	No.	%
Well	41	67
Operative death	5	8
Died later of tuberculosis	10	16
Died later of other diseases	1	1
Sick with tuberculosis	5	8
Total	61	100

DISCUSSION OF THE THREE PRECEDING ARTICLES

Dr. M. Pollak, Peoria: Dr. Head's paper is truly important because it is the first time that we have had statistics on end results of collapse therapy compared with the results of "rest" treatment alone. He mentioned a very important thing when he said that no case of minimal tuberculosis should be permitted to die. That is well to remember. We experience, however, difficulties at times when we suggest collapse therapy to our patients, because at times the family physician is not aware of the value of this therapy.

Dr. Bosworth's paper fits in with that of Dr. Head. He points out the importance of discovering the minimal case. We find it often that when a patient goes to a doctor with some vague symptoms like malaise, fatigue, low grade fever, the physician will think of tuberculosis, and such cases are often referred to our clinic. On the other hand, if the patient with tuberculosis presents some findings which can be interpreted as caused by pneumonia, head cold or bronchitis etc., sputum examination, which could clear the diagnosis, is often forgotten and neglected. It is important to stress even today that in every instance where the patient expectorates, no matter what the diagnosis might be, the patient's sputum should be thoroughly examined. If we follow this rule, very likely the number of far advanced cases will become much smaller and the patients will get proper therapy earlier.

Dr. Meixner presented a very important subject. There are, however, a number of things that should be challenged in his presentation with all due respect to an opposite point of view.

Interruption of pregnancy today is an easy opera-

tion, but it still remains a serious matter. Today, with collapse therapy, we should not often subject a woman to such interruption. With collapse therapy at our disposal, I feel that only the far advanced cases, and these too only in rare instances, present an indication for a therapeutic abortion. It is our practice with pneumothorax cases to crush the phrenic nerve just before confinement, thereby preventing the sudden expansion of the lung after delivery. I should like to call attention here to the report of Drs. Jennings and Mariette who have worked up a large series of cases of this type, and came to the conclusion that a therapeutic abortion should be done only very seldom if ever.

Finally, I should like to ask Dr. Head if he has any figures on sputum conversion?

Dr. Jerome Head, Chicago (in closing): I only want to answer Dr. Pollak's question in regard to sputum conversion. There are no special figures available on that.

I should also like to say that in going over 100 cases at the Sanitarium in an attempt to find out the process by which the physician arrived at a diagnosis, we found that between the first symptom and the time of going to the doctor there was an average period of four months, and between going to the doctor and getting a diagnosis of tuberculosis there was an average interval of ten months.

A REPORT OF TWO CASES OF TRAUMATIC RUPTURE OF THE TENDON ACHILLES LEWIS T. GREGORY, M.D., F.A.C.S. URBANA, ILLINOIS

These two cases are presented, first because traumatic rupture of the tendon Achilles is a relatively infrequent accident, and second, because the treatment instituted resulted in perfect function. Both cases were seen within six weeks of one another; both were students at the University of Illinois; and both received the injury while engaged in athletics, one while playing basket ball, and the other while playing volley ball.

L. W., age 24, on January 19, 1940 while in a crouched position ready to throw a basket ball towards the basket and with his left tendon Achilles on a stretch, was stepped upon just above the left heel rather violently by a fellow player. The patient immediately felt a severe pain in the region of his heel and was forced to leave the game. He noticed on walking that there was marked weakness in his ability to propel himself forward with his left foot. There was also considerable pain on walking. About three hours after the accident he was seen at McKinley Memorial Hospital at the University of Illinois. At that time he was complaining of a continuation of the

pain that he had experienced at the time of the accident, and definite weakness in the left leg in forward propulsion.

Examination revealed a healthy, muscular male. The region of the heel and ankle was extremely tender and there was some swelling on the posterior aspect of the left leg just above the heel, with a definite inward deformity suggesting an absence of the tendon Achilles. There was no sensation of a taut tendon Achilles when there was plantar flexion of the left foot. Routine physical examination was otherwise negative. There was no history of a previous injury to the part, and his other past history was irrelevant.

Treatment: The whole left extremity was placed in a splint for immobilization and at the end of fifteen hours, there was very little change in the previous clinical findings except perhaps a little less pain on motion of the parts. It was decided that surgical intervention should be resorted to. The patient was transferred to Burnham City Hospital and under ethylene-oxygen anesthesia, a vertical incision about three inches long was made just to the side of the normal location of the tendon Achilles. On reflecting the skin, a moderate size hematoma was found as well as a tearing of the tendon sheath. The tendon itself was so ruptured that both the proximal and distal ends looked like a frayed fringe, and the proximal end had retracted over two inches. With the left foot in extreme plantar extension three fine silk mattress sutures were placed in the unfrayed portions of the tendon and the ends brought together. The frayed ends were put in apposition to one another and two or three silk ties were used to hold the frayed ends in contact with one another. The rupture in the tendon sheath was carefully repaired and the skin incision sutured with a dermal suture. A plaster cast from the tips of the toes to above the knee was applied, with the foot in slight plantar extension in order to relieve any undue tension on the sutured tendon.

The patient left the hospital on the third day on crutches and on the seventh post operative day a window was cut in the region of the incision, the dermal stitches removed, and the wound found to be healing by first intention. On the tenth post-operative day, the upper portion of the cast was removed so that flexion of the knee was possible. On the twenty-eighth post operative day the cast was removed entirely and the ankle partially immobilized with a knit bandage. At that time it was found that the ankle joint was somewhat stiff and the patient was urged to begin some weight bearing. The tendon had apparently healed very satisfactorily. One week later the bandage was removed and the patient urged to use the foot as much as possible, but to use it with care. Two months after the injury the patient was walking quite normally and there was almost no deformity, although plantar flexion was slightly impaired. Nine months after the accident the patient

was seen and there was no abnormality of function in any way.

The second case was that of D. T., age 28, who suffered a similar accident to his left ankle while playing volley ball. He was not seen until eighteen hours after the injury. In describing the accident he is not at all positive that he was injured by a fellow player, although he thinks it likely. It is clearly possible that the rupture of the tendon Achilles was spontaneous during play.

The physical signs were the same as in the first case, and immediate operation was performed. The same type of pathology was found, and the same surgical procedure instituted. The only variation in the treatment was that the plaster cast, when originally applied, did not include the knee as it was felt that this added immobilization was not necessary and locomotion on crutches was much easier.

The cast was removed on the twenty-eighth post operative day and at the end of two months the patient was walking on the extremity. Three and one-half months after the injury the patient was walking normally and there was practically no impaired function. This patient was a little more apprehensive about the use of his foot than the first patient, and as a result his plantar flexion had not quite returned to normal, although there was no reason to believe that he would not have perfect function with continued use of the extremity.

A review of the literature on rupture of the tendon Achilles shows the following: first, Zollinger did not observe a rupture of the tendon Achilles in 50,000 accident cases. Second, in 1929 Quenn and Storanovitch collected 68 cases of this injury from the literature. Third, in 1935 Malbec reported that after careful study of the world's literature, only 86 cases had been reported. Fourth, in 1936 du Coteau stated that partial rupture of the tendon Achilles was fairly common but that he had never seen a complete rupture.

I believe that surgery is indicated in all cases. A brief resume of the literature shows the following: First, most cases are not seen by the surgeon for many hours to several weeks after the accident. Second, practically all surgeons are of the opinion that all of the cases should be operated upon. Third, those treated without surgery will gradually heal, but convalescence is very long, deformity much more likely, and with employers liability cases malingering more common. Fourth, none of the literature described the fraying of the tendon as observed in both of the cases above reported.

RADIUM TREATMENT OF PERSISTENT NOSE BLEEDING

R. L. MOTER, M.D.,

ALBION

Nasal hemorrhage has caused much anxiety on the part of any practitioner of medicine with any number of years of experience. When the doctor is the patient, he naturally has a greater interest in the condition than ever before. The writer, 60 years of age, and a practitioner of medicine for the past 37 years, has had nose bleed for many years. There is a heredofamilial tendency, as my father and one sister likewise had this same trouble. My father, of German descent, died at the age of 67 of apoplexy, and had had nasal hemorrhages for many years. My sister, like myself, has two grown children, and none of the four has had epistaxis.

On September 14, 1940, I was found unconscious on the floor of my office following a severe nasal hemorrhage. I have no idea how long I had been there when help came. An ambulance was called and I was taken to my home and placed in bed. Within a short time I resumed consciousness, and suffered intensely from general muscular cramps. An opiate was required to give relief from this pain, and 5 cc of coagulose was also administered. Soon thereafter I was given moccasin venom (Lederle) in 1 cc dosage. This was given hypodermically every third day and the dosage varied with the resulting reactions. Although remaining in bed, I continued to have from one to five nasal hemorrhages daily.

On September 30 I was removed to the Welborn-Walker Hospital in Evansville, Indiana where complete physical and laboratory examinations were made with negative findings. Blood chemistry, blood counts and smears did not show evidence of any blood dyscrasias or any other disease, and I was permitted to return to my home where the snake venom was given as before.

On the morning of November 20, 1940 I had another severe hemorrhage which all but cost me my life. The profuse bleeding was principally from the left nostril, and again I was found in almost complete collapse. Physicians were called, and decided to remove me promptly to the hospital. While preparations for the trip were being made I vomited profusely — no

blood, but food taken the previous day. This was followed by the usual severe muscular cramping, and opiates were again prescribed. There was no constipation or nausea, and although the opiate relieved the cramping, there was no narcosis following its administration.

At the hospital in Evansville an immediate blood transfusion was deemed advisable, but with much difficulty, while preparing for the transfusion, an intravenous saline solution was given. The veins were markedly collapsed, making it extremely difficult to penetrate one for the necessary transfusions. One pint of blood was given intravenously following the administration of the saline solution. The immediate effect of the transfusion was all that could be desired, and the weakness and prostration were almost completely overcome. Complete rest in bed followed by a week of a series of special examinations resulted in all reports negative. Friable blood vessels were found on the mucosa of the nasal septum which would bleed readily on the slightest provocation. These had been treated locally in the past by various specialists through the use of chemicals and electric cautery, with little more than temporary improvement.

On November 27, 1940, I called Dr. Bernard Ravdin, Eye, Ear, Nose and Throat specialist of Evansville, Indiana, and suggested the use of radium to be applied to the nasal septum in contact with these superficial blood vessels. We conferred with Dr. Charles Seitz, the Radiologist, who was willing to use radium as suggested, to begin the following day.

At intervals of one week, radium has been applied in the nose since that time with the most satisfying results. The previously eroded areas on the septum have been completely obliterated, and there has been complete relief from hemorrhage.

No evidence of blood dyscrasia has been found in my case — the findings are only those usually found in secondary anemias. It seems quite probable that through the use of radium, I can expect a complete cure.

Tuberculosis of the eye is just as much tuberculosis as tubercle of the lung, and just as little amenable to drops and lotions as pulmonary tubercle is to sprays and bronchial injections. H. M. Traquir, Ann'l Rep. Tuber. Soc. of Scotland, 1940.

A NEW SYNDROME OF CORPUS LUTEIN DEFICIENCY

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The early 1930's were rich in experimentation with ovarian as well as other glandular substances. Since then medical literature has been filled with articles on the various female hormones and their influence on the menstrual cycle, their bearing on pregnancy, and their relationship to menopause. But very little has been said relative to hormone therapeutics for that enormous group of women who demonstrate no definite organic disease, but who struggle miserably through most of their lives without ever enjoying a feeling of well-being until they have passed their climacteric periods. It is in their behalf this paper is inspired, in the hope that the future may bring them some escape from their many disagreeable symptoms.

In the latter part of the nineteenth century it was demonstrated that the ovaries secreted some substance that was picked up by the blood stream, which influenced normal puberty development phenomena, and which helped to "preserve the integrity of the genital apparatus." Within the past ten years, particularly in 1931 and 1932, much was learned concerning the influence of ovarian and pituitary hormones on sexual development, menstrual cycle function, pregnancy, embryological development, lactation, and menopause. But there has been no reported work of note on correlation of ovarian function with the physiology of the nervous systems of women between the ages of puberty and menopause.

Ovarian hypofunction in castrates or at menopause is easily diagnosed, and scientifically treated with estrogenic substances. Before menopause, when marked menstrual disorder is present, a similar line of treatment is usually effective. The difficulties of patients with deficient follicular hormone are rather well understood, and their management is producing on the whole encouraging results. But the young individual with normal or nearly normal menstrual cycle, in whom the consideration of hormone deficiency is usually overlooked, is she who presents a peculiar symptom complex, mostly neurological in character, and who is generally classified as being

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neurasthenic, psychopathic, imaginative, or just lazy. She is the chief topic of this discussion.

Polycystic disease of the ovaries, the pathogenesis of which is not well explained, is usually bilateral. Pathologically, the ovaries contain many cysts of variable size, and are larger than normal, their dimensions and shapes being dependent on the number and sizes of the cysts present. The liquor of the cysts is rich in folliculin, and the patient does not, therefore, present a hypoerogenic symptomatology. The remarkable fact which has not been stressed as a possible cause of ovarian dysfunction is the conspicuous lack of luteinization. It is probably this factor which gives rise to the characteristic chain of symptoms which is usually undiagnosed in the woman with polycystic ovaritis.

The most common complaints due to the hormonal unbalance produced by this condition are those of being tired, regardless of effort or rest, nervous, irritable, and depressed. Emotional instability may be such that weeping is frequent on slight provocation. Leukorrhea is usually present. There may be partial or total frigidity. Irregular menses, dysmenorrhea, ovulation pains, premenstrual headaches are frequently found. Other multitudinous functional disturbances often encountered include tachycardia and palpitation, dyspnea, elevated blood pressure, dermatographia, blotchy blushing over the chest, neck, and face, spastic colitis, insomnia, shifting aches and pains, and vague visual disturbances. This dysfunction probably ranks first as a cause of relative sterility; and in the event of pregnancy may result in early abortion. Associated with prolonged corpus luteum deficiency is also often found a fibro-cystic degeneration of the breasts. Fibroid tumors of the uterus, on the other hand, although usually associated with endocrine unbalance, are not commonly encountered, and probably have no connection with defective luteinization.

Years ago progesterone, the only well known corpus luteum hormone, was presented by careful laboratory animal experimentation as being an important factor in menstrual irregularities, endocrine sterility, dysmenorrhea, threatened and habitual abortion, regulation of the vasoconstrictor mechanism of the vascular system, and growth and proliferation of the alveolae of the breasts. The theory is not new that the characteristic colicky pains of dysmenorrhea are due to

excessive folliculin stimulus to uterine contractions with an insufficient amount of inhibiting lutein. An excess of estrin over corpus luteum in the blood stream of guinea pigs has been observed to inhibit conception, and in cases of pregnancy to cause early abortion by producing hypermuscular activity of the uterus. Yet the complex symptomatology of deficient luteinization, as is so frequently found in the woman with polycystic ovaries, has not been described as a distinct clinical entity with a specific therapy.

Early in the climacteric period, before menstrual changes have been evidenced, gradual inhibition of ovarian function may produce a symptomatic picture of insufficient luteinization very similar to the above. And in this instance also there is a favorable response shown to corpus luteum treatment.

The procedure of choice for prompt relief of those patients suffering from ovarian hormone unbalance, when the symptoms evidenced are reminiscent of lutein failure, is the intramuscular administration of corpus luteum extract, as a simple expedient of supplying a deficiency. In addition to relieving the symptom complex, there is an apparent temporary stimulation of luteinization, as the improvement usually lasts for from one to three years. Future treatment, however, should be anticipated. Whether or not the use of prolan B, the luteinizing factor of anterior pituitary extract, would be of value as a corrective adjunct is not known.

SUMMARY

1. There has been very little progress in the last ten years in the study of ovarian hormonal function and deficiency therapeutics.
2. A definite symptomatology accredited to insufficient luteinization in the ovaries has been described, and a treatment recommended.
3. Polycystic ovaritis and inhibition of ovarian function preceding menopause are thought to be the causative factors.
4. It is hoped that prolan B may prove a valuable treatment adjunct.
5. It should be remembered that undue fatigue, so-called nervousness, irritableness, and mild depression, especially with the presence of leukorrhea, are associated with improper function of the ovaries, and in the absence of any demonstrable pathology should be so considered and treated.

6. Apparent sterility in women presenting the described symptom complex can be treated with a high percentage of success.

7. One of the etiological factors to be considered in early threatened or habitual abortion is lack of proper corpus luteum function.

8. Lutein deficiency may cause dysmenorrhea.

9. Fibro-cystic degeneration of the breast glands has been observed to be associated with prolonged estrin-lutein unbalance.

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REFERENCES

1. The Effect of Injections of Female Sex Hormone on Conception and Pregnancy in the Guinea Pig; G. Lombard Kelly, M. D.; *Surgery, Gynecology and Obstetrics*, Mar., 1931, p. 713.
2. Symptoms Accompanying Ovarian Hypofunction; August A. Werner, M. D.; *The Journal of the Missouri State Medical Ass'n.*; August, 1931, p. 363.
3. Endocrine Activity of the Ovary; Edgar Allen, Ph. D.; *The Journal of the A. M. A.*, Oct. 24, 1931, p. 713.
4. Climacteric Changes; E. Von Graff, M.D.; *The Journal of the Iowa State Medical Society*, Apr., 1932, p. 183.
5. Role of the Ovarian and the Anterior Pituitary Hormones in the Sexual and Reproductive Cycle; P. D'Acierno, M. D.; *The Journal of the Medical Society of New Jersey*, May, 1932, p. 394.
6. The Therapeutic Value of Amniotin in the Menopause; Samuel H. Geist, M. D., and Frank Spielman, M. D.; *American Journal of Obstetrics and Gynecology*, May, 1932, p. 697.
7. On Certain Endocrine Factors in Menstruation, etc.; Emil Novak, M. D.; *American Journal of Obstetrics and Gynecology*, Sept., 1932, p. 319.
8. The Therapeutic Application of Gonadotropic Hormones; R. W. Johnstone, C. B. E., M. D., F. R. C. S.; B. P. Weisner, Ph. D., and P. G. Marshall, B. Sc.; *The Lancet*, Sept. 3, 1932, p. 509.
9. Endocrine Therapy in Obstetrics and Gynecology; John C. Burch, M. D., F. A. C. S.; *Surgery, Gynecology and Obstetrics*, Feb., 1940, p. 503.
10. Puberty, Menstruation, Pregnancy; Robert T. Frank; *Bulletin of the New York Academy of Medicine*, Feb., 1940, p. 83.
11. The Correlation of Sex Endocrines and Pelvic Surgery in Gynecologic Therapy; Robert A. Ross, M. D., F. A. C. S.; *The Journal of Southern Medicine and Surgery*, Oct., 1940, p. 545.

THE SOFT-SOAP HAZARD

Beware of the days when all goes well; beware of the word of praise and the pat on the back, for all such things are fickle. But when Old Man Adversity knocks at your door, do not try to holler loud enough to drown the sound of his knocking. Ask the old croaker to come in and justify his visit. Be candid with him, strip him of his cloak of mystery, and find the purpose of his visit. From him you may learn much; but he is a peculiar sort of fellow in that the more you learn from him the less often he knocks at your door and the happier are your days.—*Journal of the Medical Society of New Jersey*.

THE OPERATIVE TREATMENT OF CARCINOMA OF THE OESOPHAGUS

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The oesophagus is one of the last seats of carcinoma which has begun to yield to radical surgical treatment. The two principal reasons for this late response have been the slow development of intrathoracic surgery in general and the great difficulty of performance of suture anastomosis of the oesophagus.

It ranks high among the organs that may be the seat of primary carcinoma. Dormans in a study of the frequency of cancer in general, investigated 124,872 autopsies of patients over 20 years of age. He found 23,139 cases of malignancy or 17.7%. Of these 1,679 cases or 1.35% were of the oesophagus, i.e. one patient in every 74 died of carcinoma of the oesophagus. Only the stomach, lungs, and rectum were more frequent seats of the disease.

Hunnerman and Eberhart in an analysis of 182 cases treated in 1930 to 1936 in the University Clinics in Cologne and in Grashey's private clinic found that 178 were in males and only 4 in females which is one of the greatest known differences for malignancy situated in an organ alike in both sexes. However when carcinoma is situated in the uppermost portion of the oesophagus, it is usually in women. In the great majority of cases the lesion is situated within the thorax, beneath the level of the arch of the aorta. In Hunnerman and Eberhart's cases, 10% were in the cervical portion, 53% in the vicinity of the tracheal bifurcation and 37% in the lower thoracic portion.

Carcinoma of the oesophagus is nearly always of the squamous cell variety and tends to invade the adjacent tissues and to metastasize by way of the regional lymph channels and eventually by the blood stream. Spread by direct extension to the adjacent mediastinum, pleura or lung is common in long standing cases when the tumor is situated within the thorax. The regional lymph nodes which are most often involved are the cervical in case the tumor site is in the neck, the tracheal, parabrachial and posterior mediastinal when it is about the level of the tracheal bifurcation and those of the lesser curvature of the stomach when it is situated in the lower

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thoracic region.

It should be possible to make the diagnosis of carcinoma of the oesophagus at perhaps the earliest date and with the greatest ease and certainty of all the internal carcinomas. Difficulty in swallowing appears relatively early and is steadily progressive. Regurgitation of food, and loss in weight and strength follow. Pain in the back or lower oesophageal region is usually a later symptom and is often the result of extension to surrounding parts. Roentgenography nearly always reveals the obstruction. It is practically always possible to locate the lesion by oesophagoscopy noting the constriction and gross appearance and to confirm the diagnosis by the performance of biopsy and microscopic examination.

The treatment of oesophageal carcinoma until recently has been practically entirely by palliative measures involving dilatation, gastrostomy and irradiation. X-rays and radium have resulted in cure in almost no cases and the average period of survival after treatment is not very great, averaging about 9 months. Moreover while the growth may be somewhat retarded and the pain and obstructive symptoms lessened, there is often important damage to radio-sensitive tissues and organs in case of heavy irradiation. Coutard's fractional dosage of 3,500 to 4,000 r is the most satisfactory one. Proske has reported 21 cases of regional metastatic carcinoma of the thoracic oesophagus developing after Coutard roentgentherapy of carcinoma of the pharynx, larynx and first portion of oesophagus with marked control or disappearance of the primary lesion.

Operations introduced for the radical cure of carcinoma of the oesophagus have varied according to the location of the tumor. Operation for carcinoma of the cervical portion was first successfully performed by Czerny in 1877. However since then it has not often been performed and the results have rarely been satisfactory. Associated laryngectomy and cervical lymphadenectomy have also been necessary in a considerable percentage of the patients and the primary mortality has been high. Gluck made a collective report of 116 cases six of which were five year cures. Treatment in recent years has been more by irradiation than by operation.

The technique of operations for resection of carcinoma of the intrathoracic portion of the

oesophagus was worked out principally by Sauerbruch but he has apparently not published a successful case. They were performed principally through a left seventh intercostal transpleural incision. In case of tumors at or near the cardia, the stomach was brought up into the chest, the tumor resected and an end-to-end anastomosis made. When situated above these levels, the tumor and oesophagus were liberated, the oesophagus divided below, its lower end infolded, the upper portion brought out through an incision in the neck and the tumor then cut off leaving an oesophageal fistula. Up to 1913 thirty-four cases had been operated on under differential (mainly negative) pressure, 17 by Sauerbruch and 17 by other surgeons with a 100% mortality. In 1913 Torek operated on the first case successfully bringing the proximal end of the oesophagus with the tumor-bearing portion out through the neck and the patient lived for 13 years, dying eventually of pneumonia. A successful case operated on by this method was reported by each of the following: Eggers in 1926, Torek in 1930, King, and Edwards and Lee in 1936 and Brunn in 1937.

Successful resection of the lower end of the oesophagus for carcinoma with intrathoracic displacement of proximal portion of stomach and oesophageal gastrostomy was first reported by Ohsawa of Japan in 1934. The operative approach was by way of a thoraco-laparotomy, the incision being in the midline of the epigastrium and along the left seventh intercostal space. The diaphragm was divided down to the oesophagus previous to resection and anastomosis. In 1934 he reported eight cases of oesophageal gastrostomy and two cases of oesophageal jejunostomy which survived the immediate operation but no follow-up was given.

The first successful resection with oesophago-gastrostomy through a left transthoracic approach was reported by Marshall in June 1938 and the second case by Adams and myself in August 1938. Since then Marshall has had other successful cases. Garlock has reported the largest number of resections in recent years. Of 10 cases operated on the tumor was removed in 7. One case was operated on by oesophago-gastrostomy with survival and 6 cases by division of the oesophagus below the tumor and cervical oesophagostomy with 5 survivals. In addition he has performed three transthoracic resections for car-

cinoma of the cardiac end of the stomach followed by oesophago-gastrostomy with one survival.

Ten cases have been operated on in this clinic by Doctors Adams, Prohaska and myself in an endeavor to perform radical resection. In two cases the tumor was located in the cervical region and had so extensively invaded surrounding tissues that resection was impossible. Of the eight cases in which the tumor was situated within the thorax resection was carried out in six through a left 7th rib thoracotomy. In the other two cases there was regional extension which made resection impossible. A blood transfusion varying from 600 to 900 c.c. was given during the operation in each case resected. The anaesthetic was ethylene administered with a positive pressure of about 6 mm. Hg. In two cases of carcinoma of the lower oesophagus, resection was followed by oesophago-gastrostomy. One patient survived and is free from signs of recurrence two years and four months after operation. The other died three days after operation. Of the four cases in which the tumor was situated above this level, division of the oesophagus and removal of the tumor through the neck was performed. Two patients survived the operation and two died in the early postoperative period. This gives a fifty per cent. mortality for the six cases that were resected.* Brief abstracts of the histories follow.

ESOPHAGOL GASTROSTOMIES

Case 1, previously reported by Adams and myself. A female, aged 53 years had a carcinoma of the terminal oesophagus producing symptoms for 4 months. The operation was performed by a left thoracotomy with resection of the seventh rib. The tumor-bearing lower oesophagus was freed from surrounding tissues, the diaphragm was opened and enlarged lymph nodes found along the upper portion of the lower curvature. These were freed and the gastric artery divided and tied off. The stomach was then pulled up into the thorax where the cardia and involved lymph nodes were resected and the end closed with two rows of sutures. The fundus of the stomach was then anastomosed to the end of the oesophagus above the tumor by an inner layer of through and through and an outer layer of Lembert interrupted sutures. A catheter gastrostomy was per-

formed, the diaphragm closed about the stomach, a catheter introduced into the chest through an intercostal space, the chest wound closed tightly and the air pumped out of the pleural cavity. The patient made an uninterrupted recovery and is now well and free from recurrence two years and four months after operation.

Case 2. Male, aged 60 years, had a carcinoma of the oesophagus 3 inches above the cardiac end and producing symptoms for seven months. The patient was operated on by a technic similar to that described in the previous case. There was extensive infiltration of the surrounding mediastinal structures by the tumor and the right pleural cavity was opened in freeing it. The diaphragm was opened, the gastro-hepatic omentum was divided and the gastric artery divided and ligated. This permitted the stomach and spleen to be pulled up within the thorax. The oesophagus was doubly ligated just above the cardia and the distal end infolded. The proximal part of fundus was then anastomosed to the oesophagus above the tumor about two inches below the aortic arch, using two rows of sutures. For the relief of tension on the anastomosis the stomach was anchored high by additional sutures to surrounding mediastinal structures. There was great cardio-respiratory embarrassment calling for an intracardiac adrenalin injection during the operation and despite the simultaneous blood transfusion there was marked shock. The patient rallied following operation but died three days later of sero-hemorrhagic exudate in the left chest and beginning pneumonia. At autopsy the anastomosis between oesophagus and stomach was found to be intact.

If oesophago-gastrostomy is contemplated, a preliminary gastrostomy is contra-indicated as it interferes with elevation of the stomach.

THORACO-CERVICAL RESECTION WITH OESOPHAGOSTOMY AND GASTROSTOMY

Case 3. Male, aged 64 years had had gradually increasing difficulty in swallowing and weight loss over a period of 3½ months. Roentgenography and biopsy established a diagnosis of carcinoma beginning about four inches above the cardiac end of the stomach. A gastrostomy was first performed. Two weeks later the lesion was approached through the thoracic incision previously described; the tumor was markedly adherent to the surrounding mediastinum but it was freed and the diaphragm opened. Glands were found on the lesser curvature. The involved lymph nodes were removed, the oesophagus divided just above the stomach and the distal stump turned in. It was impossible to draw the stomach up high enough for an oesophago-gastrostomy. The diaphragm was closed and the oesophagus freed with the hand up to the thoracic aperture. The chest was closed with catheter drainage and the air exhausted. An incision was then made along the lower border of the left sternomastoid muscle and the oesophagus freed and brought out through the wound, after which the tumor was cut off. The patient had a rather severe postoperative course for three days but recovered.

*Since writing this 3 more successful transthoracic resections of the oesophagus have been performed. In one the carcinoma was at the level of the aortic arch. In two the carcinoma was of the cardiac end of the stomach with obstruction of oesophagus. They were both treated by resection of the tumor bearing portions of oesophagus and stomach followed by intra thoracic oesophago-gastrostomy.

A rubber and glass tube connection between the oesophageal opening in the neck and the stomach was established so that most of the time food and drink were taken through it. Signs of intrathoracic recurrence developed after one year and the patient died 16 months after operation.

Case 4. Male aged 46 years had a carcinoma of the oesophagus at the level of the tracheal bifurcation which had produced symptoms for three months. A gastrostomy was performed. Ten days later the chest was opened and the tumor resected by a technique similar to that in Case 3 except that the diaphragm was not opened. The patient made an uneventful recovery and is using an artificial tube oesophagus three months after operation.

Case 5 was a male aged 51 years who presented a carcinoma at the level of tracheal bifurcation producing symptoms for seven months. It was resected in a manner similar to that reported in Case 4. The patient died seven days after operation from mediastinal infection. Two lung metastases were found at autopsy.

Case 6 was that of an elderly male whose tumor was located at the level of the tracheal bifurcation. It was resected in a similar manner. At operation there were adhesions to the posterior wall of the lower part of the trachea and the trachea was entered at operation. After closure of the wound there was leakage of air through the tracheal opening into the chest and the patient died 15 hours after operation.

SUMMARY AND CONCLUSIONS

This series of six cases of resection with three survivals (3 additional survivals at time of proof reading) and one patient free from recurrence $2\frac{1}{3}$ years after operation, coupled with other favorable reports, demonstrates the feasibility of radical operation for early recognized carcinoma of the oesophagus. In four of the cases the lesions were advanced at the time of operation. It cannot be too greatly emphasized that if the public and the profession were to become mindful of this disease so that every patient developing symptoms of oesophageal obstruction would be subjected not in three to seven months as in these cases but immediately to roentgenography, oesophagostomy and biopsy, the diagnosis could then be established and a high percentage of resections performed. With increased experience the operative mortality would be greatly reduced just as it has been in case of lobectomy and pneumonectomy during the past ten years and the percentage of cures should approach that of carcinoma of the stomach (which according to Pack amounts to only 3%) because carcinoma of the stomach does not as regularly produce obstructive symptoms and consequently is not diagnosable as early as is carcinoma of the oesophagus.

THE USE AND ABUSE OF CHEMOTHERAPY IN OBSTETRICS AND GYNECOLOGY

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It is difficult to define chemotherapy but the term should be used to signify a chemical agent which has therapeutic value against specific organism. When this term was first used is difficult to determine, but Ehrlich employed it in 1910 in his epoch making report of Arsphenamine "Die Experimentelle Chemotherapie der Spirillosen."¹

The use of mercurial inunctions was recorded in Arabian literature and recognized as having value in certain skin diseases as early as 1000 A. D. Cinchona bark was long known to have value in chills and fever of malaria. Of course, the specificity of the chemical compounds of quinine and mercury was not established until the malarial parasite was identified by Laveran² in 1800 and the spirocheta pallida was discovered in 1905 by Schaudinn and Hoffman.³

There have been few specific therapeutic agents in times past and their number has not increased rapidly. Syphilis was probably one of the first diseases to yield to specific chemotherapy and much work has been expended on compounds of mercury, arsenic and bismuth in order to determine the safest, quickest and least uncomfortable method of curing this specific contagious disease. Its detection, control and cure have been of the greatest importance particularly in obstetric but also in gynecologic practice. With a few notable exceptions the treatment of bacterial infections has not been based upon specific therapy except where antitoxins and antisera have proved of value. Such treatment is naturally more scientific and depends upon an etiologic rather than a morphologic basis.

During the last few years much attention has been attracted to the sulfonamides, chemical compounds which have more or less curative value in certain serious and acute bacterial diseases. Some of these acute infections involve the female genito-urinary tract and become of interest to the obstetrician and gynecologist,

whose patients are also subject to coexistent diseases which may be amenable to these specific agents. The development of chemotherapy has altered our concepts of treatment somewhat. With it, recognition of the specific organism becomes of the greatest importance — the site of its activity of lesser significance. The site of infection, however, is not without importance because alteration in morphologic condition affects the physiology of the organs and is related closely to the clinical course of the disease. We must, therefore, in the treatment of patients consider infection from two viewpoints: First, the microorganism and second the organs infected. Indications in combatting the former are to use specific therapeutic agents. Treatment of the latter is to maintain the function of the organ and tissue involved and to attempt ultimate restoration to normal. The present day treatment of infection resolves itself into the specific and the adjuvant and both are essential in securing optimal results. Pneumococcic infection is not an infrequent complication of pregnancy, the puerperium, and the postoperative period.

Formerly the treatment of pneumonia was based upon the diagnosis of the disease process in the lungs and depended upon a variety of drugs, symptomatic treatment and good nursing care. With the development of antisera and rapid methods of typing pneumococci, the treatment became more satisfactory and specific. Now, chemotherapeutic agents have arrived which may be used, if necessary, before typing has been completed and may be administered in conjunction with or without the appropriate antiserum. Combined and symptomatic treatment should not be discarded as such therapy may yield the best results. Surgical treatment, especially drainage of abscesses will continue to be essential. Where localized abscesses develop we have been able to demonstrate the presence of these drugs in the pus. Nevertheless, chemotherapy is entirely inadequate here unless it is supplemented by operative treatment to drain the localized collections of pus. When such abscesses are so located as to be inaccessible to drainage, or are not drained, cure by chemotherapy alone is unlikely.

Mixed infections are not uncommon. One microorganism may be susceptible to the drug, the other may not. It is obvious that nonsusceptible invaders must be overcome by the nat-

ural reactions of the patient or by supplemental therapy. The advent of new chemotherapeutic agents in the cure of certain diseases is no reason for the abandonment of other forms of therapy which have proved their value. The patient as well as the disease must be treated. Antisera and antitoxins should not be discarded and adjuvant treatment must continue to be used. Symptomatic treatment must still be recognized as important and vital. Transfusion may be a life saving measure in many cases of infection or of infection complicated by anemia. Specific chemotherapy is to be regarded then as another tool in our armamentarium for combatting certain diseases, and the new agents should be used in conjunction with older, tried and proved methods of therapy.

The basis of the specificity of sulfonamide compounds in bacterial infections is still unknown. According to present methods of classification, these chemical compounds are not specific for any one type of bacteria to the exclusion of all others. They are effective against cocci and bacilli and against Gram positive as well as Gram negative organisms. By some undetermined mechanism they exert a potent retarding effect on the growth of certain microorganisms yet are completely inert to others which appear to be closely related in species, e.g., *Streptococcus hemolyticus* (beta type) and *Streptococci viridans* (alpha type) as contrasted with *Streptococcus hemolyticus* and *Escherichia coli*. There also seems to be some difference in the effect on the same type of organism when it is located in different sites. Sulfanilamide does not appear to be as beneficial in hemolytic streptococci infections of the throat as of the female genitalia.

The action of these compounds cannot be regarded as limited to the infecting organisms and without effect upon the host. It is important to emphasize that these drugs have no direct effect on the morphologic tissue changes associated with infectious disease processes. The structural and functional changes wrought by the invading organisms cannot be remedied and the tissues restored by the use of this therapy. The administration of these drugs early in the course of the bacterial invasion is essential if the anatomic and physiologic damage of the infections is to be minimized.

These drugs are very potent and one has to be circumspect in their use. The method of administration as well as the amount absorbed must be considered. Administration may be either enteral or parenteral. The amount absorbed is important rather than the amount given. The concentration and effect depend not only upon the amount given, the frequency and regularity of the dosage but also upon the rate and degree of elimination. Patients vary in their degrees of susceptibility to the beneficial and toxic effects of these drugs. This may be due to many factors, idiosyncrasy or impaired bodily function, such as renal impairment, anemia or some peculiarity of the hematopoietic system.

A decision to use sulfonamides should rest on etiologic and scientific considerations. They should be used only in infections in which carefully controlled investigations have proved them effective. Diagnosis depends upon a bacteriologic examination by means of smears and cultures. Puerperal infection may be recognized, but the invading organism must be determined. The sulfonamides are effective against the beta hemolytic streptococcus but not against the anaerobic streptococcus. The use of sulfonamides, in the absence of a bacteriologic diagnosis, is justified only when the patient is seriously ill and delay in obtaining an exact diagnosis might endanger life. If there is no clinical evidence of improvement under trial administration, such therapy should be continued for a few days only and promptly stopped. If it is effective, the appropriate dosage should be continued.

It also seems essential to point out that the use of these drugs in infection against which they have no specific effect is more likely to do harm than good, because their toxic effects may have a harmful effect on the host without any compensatory value in combatting the invaders.

Bacteriologic diagnosis requires proper facilities and a competent bacteriologist, but culture technics and the methods of taking, staining and examining smears from infectious discharges are relatively simple. The actual culture methods employed should be those favoring the growth of both aerobic and anaerobic organisms. A few cc. of blood removed by venapuncture is sufficient for a blood culture. Smears and material for culture from urogenital discharges may be obtained easily in cases of puerperal infection

by exposing the cervix, removing the discharge with a sterile dry sponge, and then securing some secretion from within the cervical canal by sterile cotton swabs. These smears and cultures should be obtained as early in the course of the disease as possible. Blood cultures are more apt to be positive if the blood is taken at or about the peak of a temperature reaction or just following a chill.

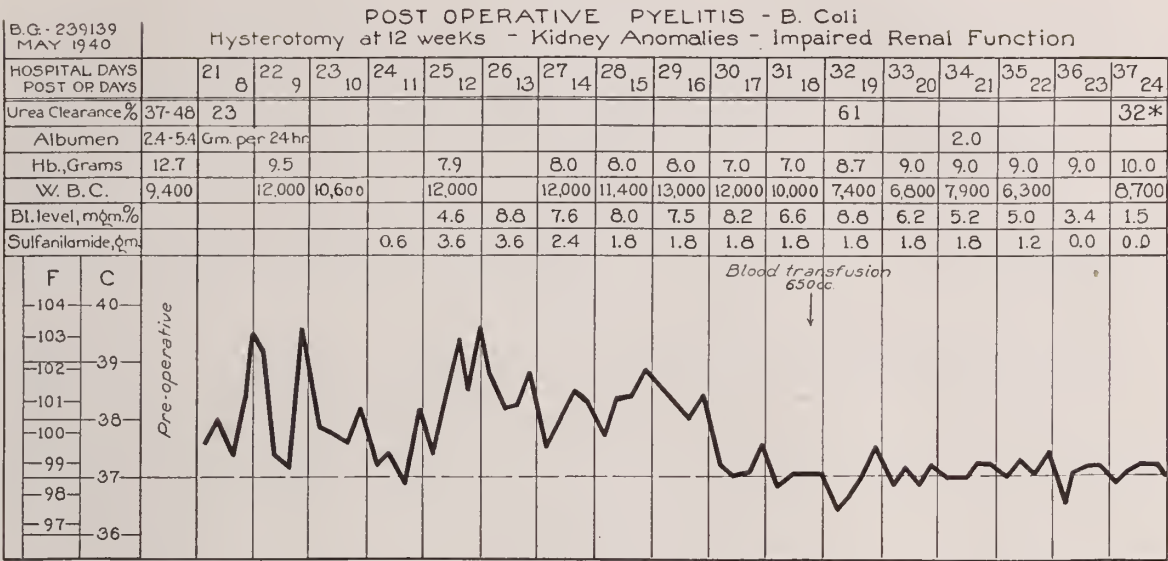
The condition of the patient should influence us very definitely in the use of these drugs. They are not indicated for trivial conditions with which the patient is able to cope with the help of simpler and less toxic therapy. The blood picture, particularly with reference to the hemoglobin, erythrocytes and leucocytes is important. One must use caution in administering these agents in the presence of an anemia or a leucopenia. The functional capacity of the kidneys is of great significance as any interference with proper elimination of these drugs may lead to toxic symptoms due to a high blood level even though the total dosage is not excessive. (Chart I).

It must be remembered that some drugs given concurrently may prove detrimental to the patient by augmenting the toxicity of the chemotherapeutic agents while other types of therapy may supplement them and prove beneficial to the recipient. Certain drugs used in antiluetic treatment and the sulfates and saline laxatives are undesirable for use while the sulfonamides are being given. Sedatives are not contraindicated. In some instances such agents as sodium bicarbonate should be used as protective therapy.

There seems to be a tendency to use these drugs as prophylactic measures where the onset of an infection is feared. At present there is scant, if any, evidence that they have prophylactic value. These agents might even reduce the resistance of the patient if toxic effects were produced.

There are certain fundamental principles about the dosage which must be followed. It must be adequate and appropriate. Too large doses are dangerous and too small doses are ineffectual and may produce a drug fast strain. The administration of these drugs must be at regular intervals. Their efficacy depends upon the maintenance of an effective level of concentration in the tissues and body fluids. A test dose of 0.5 Gm. may be given to be followed by a large

CHART 1



* Done 26th post op. day - Urine free of sulfanilamide

Chart I. Postoperative pyelitis complicated by impaired renal function cured by sulfanilamide therapy. In such a case dosage must be gaged by determination

initial dose of 3.0 Gm. or more so that the blood concentration may be brought more quickly to the desired level. It is best to maintain a fairly constant level at an appropriate or optimal point for the type of infection which is being treated. The drug is not more effective than its lowest level. In serious infections it must be given every four hours day and night. In some instances the interval between doses may be spaced at six or possibly eight-hour periods. Such administration would, however, be for special indications and

not for routine management in acute cases. (Tables 1 and 2).

The dosage varies with the type and severity of the infection and reaction of the patient. The administration of the drug should not be continued if there is no clinical improvement within four or five days. If there is improvement, it should be continued by maintaining the higher dosage for a few days and then reduced gradually as the patient improves. It is a mistake to discontinue the administration of these

TABLE I

SULFANILAMIDE* DOSAGE				
Severe Infections				
A blood level of 1 - 15 mg. per cent should be maintained.				
Pounds	Initial Dose		Dose q. 4 hrs.	24 hrs. Dose
150	4.6	Gm. 70 gr.	1.3 Gm. 20 gr.	7.8 Gm. 120 gr.
125	4.0	60	1.0 15	6.0 90
100	3.6	55	1.0 15	6.0 90
Less Severe Infections				
A blood level of 4 - 8 mg. per cent should be maintained.				
Pounds	Initial Dose		Dose q. 4 hrs.	24 hrs. Dose
150	3	Gm. 45 gr.	0.6 - 1.0 Gm. 10 - 15 gr.	4 - 5† Gm. 60 - 75 gr.
125	2	30	0.6 - 1.0 Gm. 10 - 15 gr.	4 - 5† Gm. 60 - 75 gr.
100	2	30	0.6 - 1.0 Gm. 10 - 15 gr.	4 - 5† Gm. 60 - 75 gr.

*Sulfanilamide is available in 0.33 Gm. (5 gr.) and 0.5 Gm. (7.5 Gr.) tablets.

†0.5 Gm. (7.5 gr.) of sodium bicarbonate may be given with each Gm. of Sulfanilamide.

Dosage decreased with improvement of patient.

Table 1. Sulfanilamide dosage.

TABLE II

SULFAPYRIDINE* DOSAGE					
Pneumococcic Infection					
Initial Dose		Dose q. 4 hrs.		Total Dose	
2-4 Gm. 30-60 gr.		1 Gm. 15 gr.		16-25 Gm. 240-375 gr.	
Gonococcic Infection					
Dose q. 4 hrs.	Dose q. 6 hrs.	Daily Dose	No. days	Total Dose	
0.5 Gm. 7.5 gr.		3 Gm. 45 gr.	2		
	0.5 Gm. 7.5 gr.	2 Gm. 30 gr.	4	14 Gm. 210 gr.	

*Sulfapyridine is available in 0.5 Gm. (7.5 gr.) tablets.
In severely ill patients sodium sulfapyridine 0.06 Gm. per kg. may be administered intravenously.
Sulfathiazole dosages are approximately the same as those of sulfapyridine.

Table 2. Sulfapyridine dosage.

reduced doses until the infection is well eradicated as there may be a relapse, which is due probably to the bacteriostatic rather than the bacteriocidal action of these drugs.

This discussion will be limited to a consideration of but three of the sulfonamides, namely, sulfanilamide, sulfapyridine and sulfathiazole. Some of the azo dye types of compounds such as prontosil, neoprontosil, rubiazol, etc. were used earlier but most of them have been discarded. Most observers feel that the activity of such azo compounds is due to the fact that they are broken down in the body to yield sulfanilamide. There are many preparations on the market which are known under manifold trade names. It is of great importance in specific therapy to know the exact compound which is being used. The multiplicity of names has led to much confusion and to improper or inadequate therapy. One must decide which compound to use and then ask for it by its official and scientific rather than by its trade name.

Sulfanilamide (para - aminobenzenesulfonamide) is the name of a definite chemical compound. It cannot be patented or copyrighted. It is marketed under the trade names prontylin, prontosil album, streptocide, sulfonamide-p, etc. This compound is acknowledged to be effective against the beta hemolytic streptococcus (Lancefield A, but of doubtful value in B, D and G), the meningococcus, the gonococcus, Escherichia coli and Clostridium welchii. It may have some value in staphylococcic infections of the urinary tract, but there is little evidence that it is effective in the treatment of septicemia or localized infection due to this organism. It is of no value in pneumococci infections except possibly type III, and is not effective against anaerobic streptococci or streptococcus viridans.

Sulfapyridine (2-sulfanilamidopyridine) is a newer compound than sulfanilamide, and its value is not as well established. Its effectiveness in the treatment of most types of pneumococcic infections seems to be proved. Its superiority to sulfanilamide in the treatment of infections with the gonococcus is probable. Experimental evidence points to an equality with sulfanilamide in the treatment of infections with beta hemolytic streptococcus, meningococcus, etc., but clinical proof is still lacking. Most of the clinical investigation has been with pneumonococcic infections, and though a few cures of staphylococcus septicemia have been reported, they are exceptional. It is more toxic than sulfanilamide.

Sulfathiazole (2-sulfanilamidothiazol) is still in the experimental stage, but here evidence points to an effectiveness equal to sulfapyridine as well as particular value in staphylococcus infections. As yet, there is a dearth of clinical investigation, and its value is not clearly or finally established. It appears to be less toxic than sulfapyridine.

Administration of the drugs may be oral which is preferable, or parenteral if necessary. Sulfanilamide may be given by the latter method in solutions freshly prepared daily. These may be made by dissolving the crystalline compound in

physiologic saline solution, isotonic sodium lactate or Hartmann's solution. The latter have the advantage of requiring no concurrent use of sodium bicarbonate (Long and Bliss).⁴ Ten Gm. of the crystalline compound may be dissolved in 1000 cc. of saline solution which has been heated to boiling and removed from the flame. It may then be boiled if desired, but not longer than five minutes. A soluble sodium salt of sulfapyridine is available in ampules ready for use.

Toxic signs are of definite importance but have varying significance. There are certain minor toxic manifestations such as cyanosis, gastrointestinal and certain cerebral disturbances such as confusion and disorientation. The more serious toxic manifestations are shown by: 1, rapidly developing anemia of the hemolytic type; 2, jaundice; 3, leucopenia associated with an agranulocytosis; 4, diminished kidney function with improper elimination and cumulative concentration of the drugs; 5, hematuria and evidence of renal calculi caused particularly by sulfapyridine; 6, sudden and persistent unexplained fever especially after the fifth day of drug use; and, 7, severe dermatitis. The development of these more serious manifestations call for a prompt discontinuance of the drug. These toxic signs are not always due to an overdosage of the drug but may be more properly attributed to individual idiosyncrasies (Chart 2) which arise in a small percentage of the cases, not exactly determined but probably not in excess of from three to five per cent.

There are certain clinical groups of diseases in which the obstetrician and gynecologist has a special interest. Puerperal infection has been an obstetric nightmare for ages. The history of our progress in combatting this fateful disease is a fascinating chapter in human progress. Prophylaxis continues to be of the greatest importance, but its treatment received a great impetus with the discovery of prontosil. This disease is caused by several organisms. The work of Colebrook⁵ and others has proved that when the infection is due to beta hemolytic streptococci (Lancefield A) the mortality can be markedly reduced to approximately eight per cent. whereas with corresponding treatment of Lancefield (B, D, and G) types of streptococci infections the mortality is about five times as great. Sulfanilamide therapy has been shown to be of value in puerperal infections of other types, notably the uniformly fatal malady of gas bacillus infection (*Clostridium welchii*). It probably would be helpful in puerperal infections with *Escherichia coli* and *Neisseria gonorrhoeae*. There is no evidence to support its use in puerperal infections due to anaerobic streptococci or to staphylococci. Sulfapyridine should be of greater value in the therapy of puerperal infections due to the pneumococcus and perhaps the gonococcus. It is to be hoped that in sulfathiazole our therapeutic armamentarium may acquire an agent which is effective against staphylococcus puerperal infections. (Chart 3 and Chart 4).

CHART 2

F.C. 237,620 MAR., 1940	PRENATAL PYELITIS - B. Coli. Acute Anemia*							
HOSPITAL DAYS	1	2	3	4	5	6	7	8
Hemoglobin, gm.	9.8		7.2	9.5	9.1	8.3		9.0
R.B.C.	2,700,000		1,930,000	2,910,000	2,560,000	2,560,000		
W.B.C.	15,200	18,150	13,000	8,200	8,150	9,950	10,500	10,100
Cell volume %	28		19	28	26	24		27
Bl. level mEq. %			4.4					
Sulfanilamide, gm.	3	3						
Blood transfusions, cc.			650		750	500		
			(Pallor, headache, restless Obvious icterus within 3 hrs.)					

* Toxic reaction

Chart 2. Acute toxic symptoms (sharp fall in red and white blood count) produced after only 6 Gm. (90 gr.) of sulfanilamide had been administered.

CHART 3

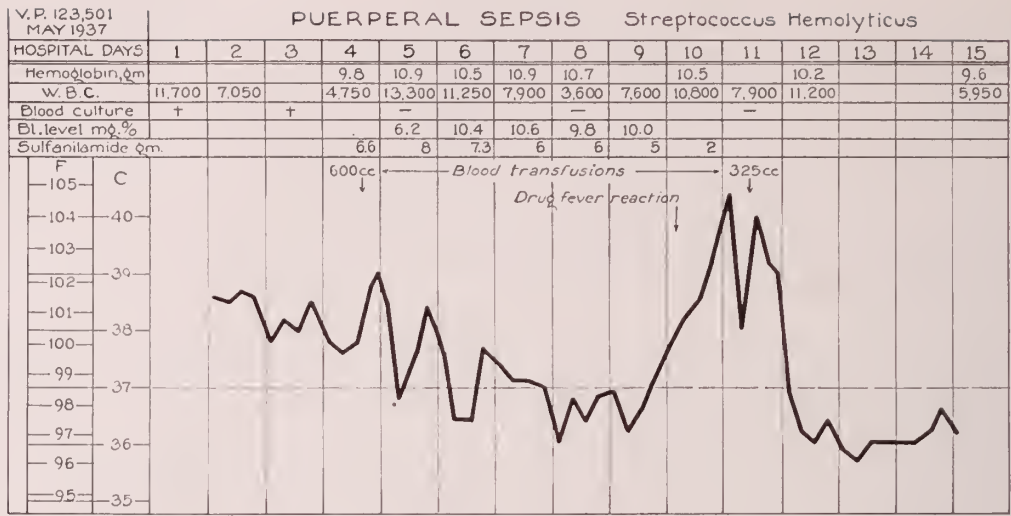


Chart 3. Response to sulfanilamide in a case of septecemia caused by Str. hemolyticus followed by a temperature rise the fifth day after therapy had been begun (possible drug fever reaction).

CHART 4

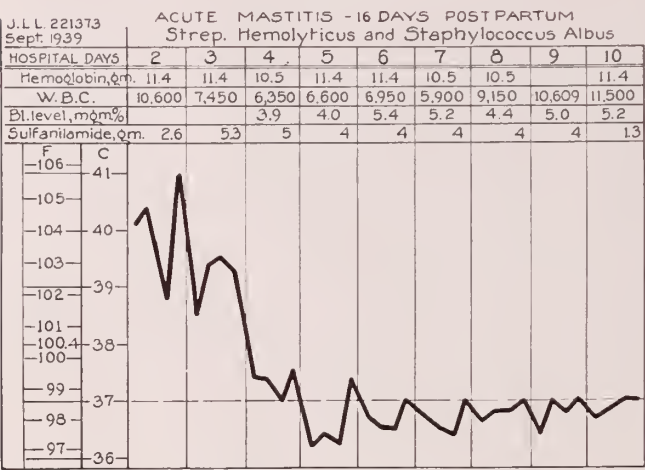


Chart 4. Rapid response to sulfanilamide therapy of a case of acute mastitis due to a mixed infection (Str. hemolyticus and S. albus).

Urinary tract infections with organisms other than the gonococcus are frequent in both obstetric and gynecologic practice. These are rarely due to the streptococcus except in cases of septicemia. The staphylococcus, for which we have no specific chemotherapy, occasionally invades the urinary tract. The most common offending organism is the Escherichia coli. Mandelic acid preparations were for a time thought to be more or less specific for this group, and while they are effective in some instances, the results have not fulfilled our hopes in most cases of pyelitis. Sulfanilamide has proved of value in many cases and alleviation, if not cure, is frequently obtained.

Pyelitis during pregnancy presents a complicated problem because of ureteral obstruction, dilatation and stasis. In treating these cases one has to bear in mind that poor urinary drainage is unfavorable to cure but favorable for the formation of calculi. It is also possible that renal function may be impaired by a hydronephrosis and a pyelonephritis. The urine should be alkalized⁶ and the urinary output about 1000 cc. A drug level of 4 to 5 mgm. per cent. in the blood is all that is necessary. The urinary level of concentration may also be important. Urine cultures should be rendered sterile if possible, and then the dose should be gradually decreased.

CHART 5

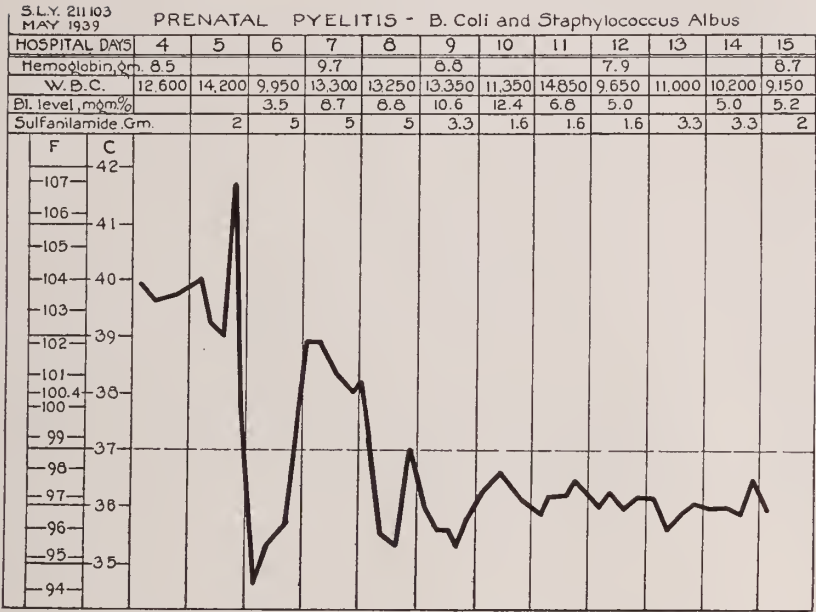


Chart 5. Rapid response to sulfanilamide in the treatment of a case of prenatal pyelitis caused by a mixed infection (E. coli and S. albus).

Cure is unlikely to occur during pregnancy or in the presence of stone or other ureteral obstruction. Clinical improvement occurs even in these cases. According to Douglas⁷ and other observers the majority of otherwise uncomplicated cases are cured. (Chart 5)

Treatment and prevention of spread of gonococcal infection of the female genitourinary tract has been a puzzling problem for generations. Sulfapyridine seems to offer the greatest promise. There is still some difference of opinion as to when, how, and over what period of time it should be used. Accuracy of diagnosis is important and controlled dosage is essential. The former depends upon the smear and culture methods. The latter is secured by the means already discussed. Reinfection and relapses must be avoided by strict hygiene and adjuvant treatment. Here, as in other infections, supplemental medical and surgical procedures cannot always be avoided. The criterion of cure depends upon repeatedly negative smears and cultures. The former cannot be omitted but the latter are much more reliable and conclusive. Usually symptoms of acute infections subside in a few days. Complications are fewer and reported relapses are probably due in many instances to insufficient evidence of cure by careful culture control. De-

pendence upon smears alone is apt to lead to unjustified conclusions relative to cure. The causes of failure are due, in some cases at least, to lack of continuity in the treatment, the neglect of adjuvant treatment such as diet, hygiene and rest, and the use of false criteria of cure. Subsidence of symptoms, negative smears and incomplete follow-up with cultures are not satisfactory evidence of cure. (Table 3)

Of infections which complicate pregnancy, pneumonia is one of the most serious. It contributes about one-half of the fatalities due to co-existing diseases. Its incidence during pregnancy is not usually high. It is much more serious in the pregnant than in the non-pregnant woman. The treatment, therefore, is of great importance as not only one but two lives may be saved. Sulfapyridine is specific for pneumonococci but should not be used to the exclusion of other therapy such as antisera and oxygen. Various clinicians have reported much lower mortality rates with than without its use. Evans,⁸ Pepper,⁹ Lord,¹⁰ Abernethy,¹¹ and others advocate its use in doses which will secure a blood level of about 7 mgm. per cent. Sodium sulfapyridine may be used intravenously to obtain more prompt action. (Chart 6)

The obstetric patient presents a special prob-

TABLE III

GONNOCOCCAL INFECTION Comparison of Therapies					
Cured					
	Total Cases	Discharged	Probable Cures	Cured	% Cured
Local	41	2	6	8	19
Sulfanilamide	46	14	18	32	70
Sulfapyridine	63	19	26	45	71
Not Cured					
	Total Cases	Never Negative	Relapsed	Not Cured	% Failures
Local	41	33			
Sulfanilamide	46	8 (3? reinf.)	6 (3? reinf.)	33	80
Sulfapyridine	63	4 (all? reinf.)	14 (10? reinf.)	14	17
				18	4

Table 3. Comparison of chemotherapy (sulfanilamide and sulfapyridine) and local management in the treatment of gonococcal infection.

CHART 6

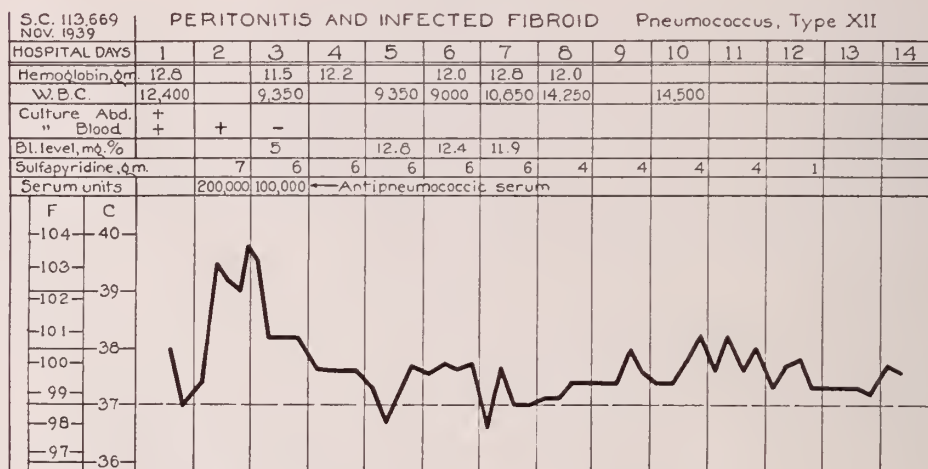


Chart 6. Gynecologic complication, peritonitis due to the pneumococcus. Response to sulfapyridine and antiserum.

TABLE IV EFFECT OF SULFANILAMIDE ON THE UNBORN RABBIT FETUS

Dosage	Does		Young		
	Total	Comment	Total Born	No. of Deaths*	Per Cent Deaths
Controls (no drug)	10	On time	73	16	21.9
0.5 Gm. per kilogram	20	12 on time 8 early	79 62	46 43	58.2 69.3
0.25 Gm. per kilogram	20	16 on time 4 early	140 22	44 13	31.4 69.0

* Fetal and neonatal deaths, but not those killed for the experiment.

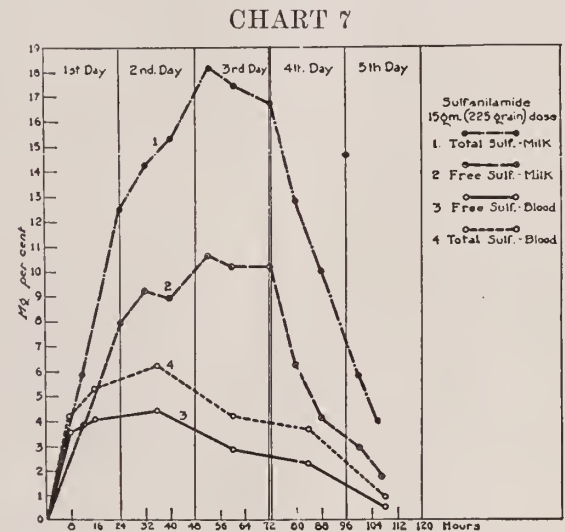
lem as one must envisage the possible effect on the fetus in utero and upon the nursing infant. These drugs should be used with consideration during pregnancy as they may have a detrimental effect on the embryo or fetus. In June, 1938¹² we reported the transplacental transmission of sulfanilamide to the human fetus. This was previously known for animals¹³ and has subsequently been confirmed for humans.¹⁴ While it is possible to demonstrate a harmful effect on animal fetuses (Table 4), the dose is relatively large and there is no proof that the proper dosage in pregnant women harms the fetus. Such a possibility should always be born in mind where large doses are used or the administration is prolonged and especially if the mother manifests toxic symptoms. It can be pointed out that no damage to the human fetus has been reported in instances where these drugs have been administered during pregnancy, and it should also be stressed that the infections against which they were used were in themselves harmful to the human fetus. We do not argue against their use under such circumstances but wish only to point out that the sulfonamides should be used only in the pregnant state for conditions which are of more than trivial importance.

It is known that sulfanilamide and probably other sulfonamides are eliminated in the milk,¹⁵ (Chart 7) but the percentage excreted is so small that there is probably little danger to the nursing infant unless it is unusually susceptible. (Table 5) Even though the amount received by the nursing infant may not be toxic, one should be constantly aware of the fact that the lactating breasts excrete definite amounts. When breast feeding is not contraindicated by a serious status of the mother, it is necessary to keep in mind

that the baby would receive a minimal but continuous dosage through its mother's milk. The condition of the nursing baby should be watched especially where the mother is receiving maximal doses with a high blood level over a relatively long period of time.

SUMMARY AND CONCLUSIONS

For many years chemotherapy has been successful in the treatment of certain diseases due to protozoa and spirochetes. Recently, more or less specific agents known as the sulfonamides have been introduced for the treatment of certain bacterial infections. These agents are not specific in their activity against any one species of organisms but have a selective action against some and no demonstrable effect against others. The mechanism of their behavior is not known. They are potentially toxic to the host and may produce



Comparison of the free and total sulfanilamide levels in the milk and blood. Dose 15.0 gm. (225 gr.).

TABLE V
THE RELATIONSHIP BETWEEN THE AMOUNT OF DRUG CONJUGATED AND THE AMOUNT OF DRUG INGESTED, THE AMOUNT OF DRUG EXCRETED AND THE VOLUME OF MILK SECRETED

Groups	Patients	Total Dose	Excreted in Milk	Mg. Per C.C.	Total Dose Per Cent	Excreted as Acetyl
A	10	2.00 gm.	3.7- 13.7 mg.*	0.006-0.02		
B	10	4.00 gm.	11.8- 54.0 mg.*	0.02 -0.04		
I	10	7.33 gm.	38.7- 93.4 mg.	0.04 -0.07	0.53-1.23	35.11-60.99%
II	5	12.00 gm.	50.3-166.4 mg.	0.07 -0.18	0.45-1.40	35.34-46.00%
III	10	15.00 gm.	64.5-233.3 mg.	0.11 -0.20	0.45-1.62	45.16-83.98%

* Free sulfanilamide only.

serious toxic results. The use of specific therapy requires greater exactness in diagnosis.

It is important to know which compound is most effective against a given type of infection. In order to avoid confusion and mistakes, official rather than trade names should be used when these drugs are purchased.

Treatment should be instituted early and carried through properly and systematically to a conclusion. The dosage should be accurate, adequate and regular. It should be properly controlled at a blood level which has been found best for the type of infection under treatment. The treatment, if beneficial to the patient, should be continued sufficiently long to ensure against a relapse. It should not be continued over a long period of time if no clinical improvement is apparent. The administration of the drug should be discontinued if major toxic symptoms develop. It is dangerous to use these drugs without proper control for too long a period of time or without being cognizant of developing toxicity.

It is an abuse not to use them early in infections where they may be beneficial but they should be used accurately.

It is an error to use them in the treatment of infections upon which they have no beneficial action.

It is a mistake to use them to the exclusion of other means of therapy which contributes to the comfort, safety and ultimate cure of the patient.

There must be satisfactory evidence of eradication of the infection and cure of the patient before therapeutic measures are discontinued.

BIBLIOGRAPHY

1. Ehrlich. Die Experimentelle Chemotherapie der Spirillen. Berlin. 1910.
2. Laveran, A. Bull. acad. de med. Sec. 2, 9: 1346, 1880.
3. Schaudinn, F. and Hoffmann, E. Arb. a. d. k. Gesund. 22: 527, 1905, Deut. med. Wchnschr. 31: 711, 1905.
4. Long, P. H., and Bliss, E. A. Clinical Use of Sulfanilamide and Sulfapyridine and Allied Compounds. Mac-Millan Co., New York, 1939.
5. Colebrook, L. and Purdie, A. W. Lancet, II: 1237, 1291, 1937.
6. Helmholtz, H. F. J.A.M.A. 111: 1719, 1938.
7. Douglas, R. G. Am. J. Obstet. & Gynec. 39: 275, 1940.
8. Evans, G. M. and Gaisford, W. F. Lancet, II: 14, 1938.
9. Pepper, D. S., Flippin, H. F., Schwartz, L. and Lochwood, J. S. Am. J. Med. Sci., 198: 22, 1931, J.A.M.A. 112: 529, 1939.
10. Lord, F. T. Proc. Inst. Med., Chicago 12: 394, 1939.
11. Abernethy, T. J., Dowling, H. F., and Hartman, C. R. Ann. Inst. Med. 13: 1121, 1940.
12. Adair, F. L., Hesselstine, H. C., and Hac, L. R. J.A.M.A. 111: 766, 1938.

13. Lee, H. M., Anderson, R. C., and Chen, K. K. Proc. Soc. Exper. Biol. & Med. 38: 366, 1938.
14. a. Berker, R. H. New Eng. J. Med. 219: 41, 1938.
b. Speert, H. Bull. Johns Hopkins Hospital. 66: 139, 1940.
15. a. Hac, L. R., Adair, F. L., and Hesselstine, H. C. Am. J. Obstet. & Gynec. 38: 57, 1939. See also reference 12.
b. Stewart, H. L. Jr., and Pratt, J. P. J.A.M.A. 111: 1456, 1938.
c. Pinto, S. S. J.A.M.A. 111: 1914, 1938.

THE AGEING HEART

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With the prolongation of life that has occurred as result of improvement in the pre- and post-natal care of the infant, with the decline in the death rate from tuberculosis, with the very general institution of personal hygienic and public health measures, there has resulted definitely in this country an increase in the number of older people, older in the sense that they have passed the age of 50 in so far as the text of my talk is concerned. Dublin¹ has pointed out that, in 1850, more than half of the total population of this country was under 20 years of age; that in every census taken regularly each decade, this percentage has gradually fallen. In 1900 the young people represented slightly under 45 per cent of the population; in 1930, 39 per cent, and in the last census the figures have now dropped to 36.7 per cent. As the number of young people fell proportionately, at the same time the number of old people, that is people passed the age of 65, showed a marked percentage increase. In 1850, of the total population, only 2.6 per cent had passed the age of 65, in 1900 it was 4.1 per cent and in 1935 the percentage was approximately 6. It is estimated that by 1980 people passed the age of 65 will represent 14.4 per cent of the whole population, with the naturally associated corollary that the percentage of younger persons will be correspondingly diminished. As the incidence of such diseases as tuberculosis and diabetes, cancer, the infectious diseases, generally diminish or as these diseases are controlled, it naturally follows that as the cause of death cardiovascular renal disease will be a more important factor in causing death than it is now.

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As a matter of fact as of today, it is familiar to all physicians and to most of the educated laity that heart and vascular diseases cause more deaths than any other one disorder. The figures supplied by Dublin show that a child at its birth will have 45 chances in 100 of dying as result of cardiovascular renal disease. The young man at the age of 30 will have 52 chances in 100, and by the time the individual gets to the 60 the chances are 6 in 10. As the population increases its age span, the deaths as result of cardiovascular renal disease will become more and more common. While in a broad sense cardiovascular renal disease really represents arterial disease primarily, nevertheless the expression of the arterial disease may be primarily in the heart or kidney or vessels of the brain. Sometimes the combination of the three is so closely interwoven that it is impossible to tell which of these conditions it is that is causing most of the patient's trouble. However, the heart undoubtedly is of primary importance. It is an old saying that a man is as old as his arteries; to paraphrase that aphorism: a man is as old as the arteries of his heart. Certainly arteriosclerotic heart disease and hypertensive heart disease are causing more deaths now than vascular accidents in the brain, or uremia. As such is the case, it behooves us as physicians to consider the growing importance of the care of the aged and more particularly the care of the ageing heart. Geriatrics already is a science which is growing by leaps and bounds. It is quite possible that 50 years from now this particular subdivision of medicine may have more specialists, and be of more importance, than the specialty of pediatrics.

CAUSES OF AGEING

The factors responsible for a person living a span of years sufficiently to be aged are many and varied. There have been a host of studies made on these various factors, no one of which is of supreme importance. I wish to discuss them in the following order: (1) heritage; (2) economic status; (3) geographic locality; (4) marital state; (5) previous illness; (6) endocrines, and (7) tobacco and liquor.

Heritage: It was Oliver Wendell Holmes, I think, who amongst his many pithy remarks made the statement — to live to an old age, pick your ancestors. Heritage undoubtedly plays a

very important part in the longevity of the individual. Time and again I have observed families whose members lived to the eighth or ninth decade of life and when they were 70 were biologically younger than members of other families who were at the age of 40 or 50. The inheritance of tendency to arteriosclerosis will condemn more people to an early death than probably any other one cause. On the other hand, an individual fortunate enough to have ancestors whose arteries do not develop degenerative changes until late in life, that individual is going to live to a ripe old age if he is not cut down by another hereditary disease, cancer, or if he survives the possibility of an automobile accident, or if pneumonia does not supervene.

Economic status is of some minor importance. Naturally it is to be expected that a man who is economically comfortable and can have always an ample and adequate diet and who is not forced to live in close contact with other individuals, is going to have a better chance of living to an old age than is the man who has to undergo the vicissitudes of a hard economic life.

Geographic locality is of some moment. People on the Eastern seaboard have a shorter span of life than those who live in the Midwest. This is explained on the basis of the fact that people lead a more concentrated and active life in the big cities of the East than they would or do on the prairies of Nebraska. As Pearl writes "the length of life is generally in inverse proportion to the rate of living." In so far as the tropical or subtropical portions of the earth are concerned, arterial disease is not as prevalent as in the temperate zones. The explanation of this is probably not due to the direct and actual effect of heat on the body mechanisms but rather the result of the fact that heat slows a person down, life is calmer and more placid in the tropics than in the stimulating temperate zones, furthermore the urban population is greater in the temperate areas of the globe than is the rural. The contrary is true in the warmer sections of the globe.

The marital state also plays a part, it is true but a minor one, in the tendency to live to an advanced number of years. The married man or woman has a slightly better chance of outliving his or her bachelor or maiden friend.

Previous illness is, of course, of extreme importance. The man who has the misfortune to

have many and varied sicknesses in the course of his life will probably die in advance of the man who has a peculiar insusceptibility to infections. The person who has rheumatic fever as a child is likely to die at an early age from rheumatic heart disease. A man who contracts syphilis is going to succumb sooner or later to syphilitic heart disease, paresis or one or another of the tertiary expressions of lues unless of course he has been adequately treated. That most people are not adequately treated is not the fault of the physician but rather the fault of the individual. It should not be forgotten, furthermore, that there are some pathologists who hold that there is distinct "evidence for possible infectious basis for arteriosclerosis" (Winternitz²). This is an old concept revived by Winternitz, as it has been shown that micro-organisms may be found in arteriosclerotic plaques.

Endocrine disturbances will bring about early changes, some of them incidental to elevation of blood pressure, some of them the result of primary heart involvement as in the thyroid heart, and some of them due to changes in disposition which may accompany endocrinologic pathology.

The question of *alcohol and tobacco* has agitated the physician, the preacher and the populace for many years. There seems to be an increasing mass of evidence incriminating tobacco and nicotine in advancing the incidence of cardiovascular disease. However, it is advisable to discount to a certain extent the statement of the proponents of the evils of tobacco smoking by calling attention to the fact that the great majority of the adult population of this country smokes. Excessive smoking probably does have deleterious effect on the vascular system. I am not convinced that moderate smoking is harmful to any one. Excesses of any kind, from overeating to fits of rage and anger probably have a tendency to shorten a person's life. As for the use of alcohol, excessive use is harmful but when used in moderation, particularly in later years of life, I believe that alcohol is distinctly indicated. The antepandial drink sipped quietly and with the consumer thoroughly relaxed quiets him psychically and at the same time has a dilatatory effect on the blood vessels.

It is interesting to record the study that Pearl made of some 2,000 nonagenarians and centenarians. Some of these people used alcohol, some

abstained; some were smokers, some were not; some ate to excess, others were moderate in their food demands. The only characteristic that was common to all of these people was a placid disposition. They took things easily as they came along and did not let the problems of life and living disturb them.

I have dwelt upon ageing and the causes of age rather to the exclusion of the subject matter of the actual title of the paper which I am presenting, but I believe that these preparatory remarks play an important part in considering the changes that take place in the heart as result of the processes of time. As the individual gets older the blood vessels undergo changes which are known as arteriosclerotic. It should be borne in mind that there is difference in the age of the vessels throughout the body. The anterior descending branch of the coronary matures earlier than most arteries. Biologically if not chronologically this is one of the older arteries of the body. This statement helps to explain why this particular vessel is more likely to become occluded or to rupture than other branches of the coronary or other vessels throughout the body. The intimal and medial changes of advancing years are far more marked in the coronary arteries than in the radial arteries.³ The coronary arteries rarely show medial calcification (Mönckeberg's sclerosis), a characteristic feature of the muscular and not of the elastic arteries.⁴

The heart is unlike any other tissue in the body in that the heart muscle increases in size and weight as the person advances in years. This is contrary to most other muscular tissue, so consequently the heart weight-body weight ratio decreases as the individual ages.

As the heart grows older the valves begin to show the effect of time. Their pliability is gradually lost, fibrous changes ensue and these changes are more pronounced on the left side of the organ than on the right.

The blood pressure gradually increases but not to the high figures that the laity at least misconstrue as the normal figures for a person of an age passed 60. Williams⁵ studied a group of patients over 75 and found in the majority of this group the blood pressure was between 150-160 systolic and the diastolic was between 80-90. Normally the blood pressure should not increase

higher than 150 mm. of mercury systolic with a diastolic that does not change, that is of course assuming that this person does not have other causes to elevate the blood pressure. After the sixth decade of life the blood pressure remains unchanged unless some intercurrent disease is present.

The rate of the heart after birth slowly declines during the first ten years of life. At the time the individual is 30 years of age the rate is pretty definitely fixed and remains there until the fifth decade, when the rate falls slightly, according to Cohn.⁴

The rhythm of the heart is one of the important criteria of degenerative changes in the organ. In younger persons the heart action is usually regular but as age advances premature contractions become common, heart block may make its appearance and transient attacks of fibrillation may occur or the heart may go into fibrillation permanently and yet the patient will show no signs of heart failure, at least at times for many years. Incidentally, I observed a patient with fibrillation which extended over a period of 40 odd years and which was in no way detrimental to a normal existence.

PHYSICAL EXAMINATION

As a person grows old the bony thorax becomes more or less rigid; emphysema develops to a lesser or greater degree, both of which factors make it somewhat difficult accurately to outline the heart by percussion. This difficulty, of course, can be counteracted by having an x-ray of the heart to determine its exact size. Physicians often note that heart sounds are "weak" and "distant." The explanation here is exactly the same as given for the discrepancy that occurs in percussion. Actually the weakness of the heart sound is simply due to the fact that an emphysematous lung overlies the organ, the chest has become rounded and the sounds actually are, in the older person, farther away from the bell of the stethoscope than in the case of the younger individual; they are, therefore, distant only but by no means weak. Accentuation of the aortic second sound is likely to be present after the age of 40 or at least the aortic second sound is louder and clearer than is the pulmonic second. Systolic murmurs are common and have very little significance. They may represent sclerosis of the valves or they may result from atheromatous

plaques at or near the aortic valve openings.

SUBJECTIVE SYMPTOMS

Subjective symptoms are of greater value than any other one method of determining the efficiency of the heart muscle, in my opinion. Subjective symptoms are the first evidences that are obtained showing that the heart is beginning to "tire" easily and cannot stand as much as it could in previous years. Of these subjective symptoms I think that the symptom fatigue is as important as any other one symptom. Ease of tire, under circumstances which would not previously exhaust the patient, is of prime importance. Dr. Henry Christian⁶ has stressed the importance of this symptom. Dyspnea is the symptom which is always emphasized. An intern taking a history will not ask the patient as to fatigue but always will demand of that patient whether or not he or she becomes dyspneic on slight exertion. Of course it is an extremely important observation.

Another symptom of great importance is anginal pain. Anginal pain is definitely an indication for cessation of muscular and mental activity, severe enough to bring on that particular discomfort or even agony. The occurrence of ectopics which the patient can feel or notes causes more mental distress than it does cardiac. It is disturbing and irritating to the patient to feel, as he describes it, "the heart stopping" temporarily, or "turning over" or "jumping" but the mere presence of ectopics is not an indication for diminution of activities, physical in type, but rather indicates a reduction in the mental activities of the patient. Cough as a subjective symptom is one that is more likely to be an evidence of severe rather than minimal heart failure. With the diminution of cardiac reserve, breathlessness and substernal tightness and ease of fatigue become subjective symptoms of extreme importance. Fall in blood pressure is an objective finding of note.

The electrocardiogram in older people has been studied by numerous observers. Electrocardiographic changes take place as the heart ages. Levitt⁷ studied 100 men and women who had no evidence of heart disease. Twenty-six per cent of these people showed distinct electrocardiographic abnormalities. In general it may be said that the electrocardiogram in older individuals is very likely to show low voltage and inverted

T waves. There is an increase in the duration of the QRS and PR interval. In assaying an electrocardiogram in an older person these to be expected changes which might be called normal for an old person should always be borne in mind.

I should like to emphasize that the changes I have recounted are the changes that develop as result of arteriosclerosis or of hypertension. Most of these older people have arteriosclerotic heart disease dependent upon sclerosis of the coronary vessel. Hypertensive heart disease may be present. The two factors of arteriosclerosis and hypertension are so closely correlated that most physicians speak of the cardiac state as hypertensive arteriosclerotic heart disease when hypertension is present; of arteriosclerotic heart disease when hypertension is not dominant.

TREATMENT

"The general biologic process of senescence often proves to be a subtle mechanism of self-preservation." Willius,⁸ in this short sentence, has epitomized the self-treatment of the aged heart. The person automatically slows down his activities, he does not force himself as he did in midlife and the whole tempo of existence becomes quieter. However, often this is not enough. The physician should advise the patient to restrict definitely his physical and psychical activities. Rest is of extreme importance. This *rest* for the man who is beginning to show signs of cardiac inefficiency should be definitely regulated and systematically controlled until it becomes a routine and a habit. Rest after meals is of prime importance. Half an hour reading of the newspaper after breakfast, a nap after lunch and relaxing in a comfortable armchair after dinner are measures that should always be carried out. The postprandial midday rest or nap should be at least an hour. Under no circumstance should the patient engage in exercise after eating. The coronary flow is believed to be increased after eating and for a short period of time at least no additional strain should be thrown on the coronary circulation after the ingestion of food. Proof of this statement is substantiated by the frequency with which coronary accidents occur a short time after eating.

Physical and mental effort which produce anginal discomfort or pain should be avoided. The elderly man must learn to live within his limitations. It is remarkable incidentally how

physical measures which give pleasure will not produce anginal pain, whereas those which are not associated with a certain amount of enjoyment and which should be no more severe than the former, may occasion or bring about the angina of exertion.

The patient should obtain six to eight hours of sleep during the night. I think it is inadvisable to keep the older patient in bed many hours because of the variations in the dynamics of the circulation that occur between the supine and upright position. Much better is it to have that patient sleep on his back not longer than seven hours and the additional sleep he may require he can obtain by the midday nap. If the patient is restless and cannot sleep well, small doses of one or another of the barbiturates or chloral hydrate are indicated.

In patients who have not reached the retiring age and are obligated by economic duties to work relatively hard during the week, it is an excellent idea to advise them to spend Sunday in bed or loafing around the bedroom completely relaxed and keeping completely dissociated from their usual daily duties.

When speaking of rest, certain physiologic functions of man may produce exactly the same results as are brought about by physical exertion. Straining at stool is an excellent example; sexual stress is another which should be avoided, needless to state; emotional excitement is, of course, deleterious. It is not advisable for the old alumnus to attend the crucial football game of his Alma Mater's season. At every World Series usually half a dozen or more people are carried out who, under the excitement of the contest, have had a vascular accident. I cannot speak of the Kentucky Derby but I have no doubt but that during the running of this classic race that one or more elderly people have suffered heart failure.

If the elderly patient has some physical hobby or recreation to which he is addicted, do not make him stop. He can cut down on the number of holes of golf he plays or he can spend less time in the garden than he formerly did before fatigue indicated that the heart was under a strain. It is extremely unwise to alter materially the plan of living which elderly persons have gradually evolved over a period of years. Do not force them to give up things in which they are interested.

Fortunate indeed is the older person who has a hobby and doubly fortunate is he whose hobby is a household rather than an outdoor one. The athletic minded man who shoots, hunts, fishes and golfs and finally finds that the time has come when he should not enjoy these pursuits is out of luck, but do not make him stop these activities too abruptly, let the length of time spent at the recreation be reduced and let it not be indulged in quite as frequently. More strenuous sports, such as tennis, should have been forgotten years before. Keep the older individual occupied, let him avoid the morbid outlook of old age.

Retirement from business or professional activities is often the signal for a rapid decline. If a man is his own boss, as a professional man is, at least in theory he is, or if he is not his own boss and he can arrange with his employer to work fewer hours a day he is indeed fortunate. The older man who can keep occupied for a part of the day in the occupation in which he has been engaged for many years, is not going to rust out quickly but to wear out slowly, to paraphrase an old saying.

In so far as eating and drinking habits are concerned, a quantitative reduction in food is indicated rather than a qualitative one. Let the older person eat pretty much as he wants but do not let him gain weight as result of a more restricted physical life and possibly also as a result of the overeating which the person who has not much else to do in life, may indulge in. Fortunately nature has a way of taking care of this. Increases in weight are uncommon after a person has passed the age of 60. The weight curve has become stabilized even a decade earlier than this. It is most certainly after the climacteric. It is advisable to eat the heaviest meal in the middle of the day and then follow with a rest as has been mentioned already. The evening meal should be light and before retiring a few sweet crackers and a glass of milk may be conducive to a restful night.

I think that a glass of wine with the evening meal or a highball or cocktail before dinner is relaxing and is advantageous. If a person has consumed liquor almost steadily all his life, do not try materially to reduce his alcoholic intake. If it has not hurt him by the time he is approaching senescence it will not hurt him then and the same rule applies to tobacco.

As Robbins⁹ puts it "The treatment of the aged is one that calls for tact, sympathy and consideration on the part of the physician to the patient." Do not try to make too many rules as to his living habits and to the manner in which he exists. Guide him gently but firmly. Let your advice be given in small doses. Slowly and gradually inculcate in the mind of the man whose heart has shown signs of strain that he cannot do this or cannot do that. A spirit of antagonism may be aroused in a man (or woman) who has lead a busy and active life if he is told all of a sudden he must not do this and that and cannot do something else. After all, the average man resents getting old and he resents being told what to do. A tactful approach is of extreme importance.

In the treatment of the older individual, *drugs* should not be of primary importance unless definite heart failure has ensued or early heart failure has evidenced itself, but it is not of this person who has already had failure or beginning failure that I am discussing. There is no indication whatsoever for the administration of digitalis, which drug is so often given in small doses when a man begins to show such signs as slight dyspnea on exertion and ease of tire. Nitroglycerine may be indicated if there is indefinite anginal pain. For these older people, particularly if they are rather high strung, keen and quick and do not sleep well, a dose of phenobarbital twice a day in doses of 0.032 gram is advantageous. For the hypertensive individual I have discarded practically all drugs except sedatives and give to these people either the barbiturates or a combination of chloral hydrate, sodium bromide and peppermint water.

If a man shows definite evidence of coronary disease it is advantageous to give one of the theobromine preparations to increase coronary flow and continue with the drug probably the rest of his life. I prefer theocalcin because I think it is less irritating to the gastric mucosa. Theominal is advantageous to the nervous, constantly keyed-up person but I think it is better to give the phenobarbital alone so the dose may be varied, rather than to give the same dosage persistently. Aminophyllin certainly is of value in the management of a patient whose coronaries are constricted and who has from time to time coronary pain. On the whole, however, I

think theocalcin is as good a preparation as any of these xanthine derivatives for the man who has had the warning signals or who has previously had a coronary attack.

I am not discussing the patient who has had failure but I would like to interpolate a word or two in regard to the use of morphine in a person who has had severe coronary pain. It is often necessary to give morphine to control this pain and to give it in large doses, but morphine is not the ideal drug for the purpose. It sensitizes the vagus and increases coronary constriction. Therefore, as soon as possible it is advisable to replace it with papaverine 0.032 to 0.065 gram as indicated. Atropine should be combined with morphine as in part it counteracts the effect of the drug on the vagus.

SUMMARY

I have attempted to sketch this evening the changes that take place in the heart of the individual who is growing old. I have discussed some of the symptoms and the physical examination of the heart of the older patient. I have presented to you my ideas concerning the treatment of these individuals: Tact, moderation and common sense should be the passwords. Do not let them over eat, or overdo, and do not be too solicitous in handling the older person with an ageing heart.

BIBLIOGRAPHY

1. Dublin, Louis I.: Longevity in retrospect and in prospect (In Problems of Ageing, by E. V. Cowdry, Baltimore, Williams and Wilkins Co., 1939, p. 100).
2. Winternitz, M. C.: The Biology of Arteriosclerosis. Charles C. Thomas, Springfield, Ill. 1938. p. 122.
3. Sappington, S. W., and Cook, H. S.: Radial artery changes in comparison with those of coronary and other arteries, *Am. J. Med. Sci.*, 192:822, 1936.
4. Cohn, Alfred: Cardiovascular system and blood (In Problems of Ageing, by E. V. Cowdry, p. 120).
5. Williams, F. A.: The heart in old age, *Am. J. Med. Sci.*, 192:1, 1931.
6. Christian, Henry A.: Speculations on some problems of cardiac failure, *South. Med. J.*, 20:28., 1927.
7. Levitt, G.: The electrocardiogram in the aged, *Am. Heart J.*, 18: 692, 1939.
8. Willius, F. A.: The management and treatment of the heart in senescence, *Med. Clin. N. A.*, 21:755, 1937.
9. Robbins, I. L.: A general discussion of the problems of old age, *New Orleans Med. & Surg. J.*, 93: 184, 1940.

Workers caring for patients with tuberculosis can only be shielded from exposure to infection by conscientious and conscientious precautions. Emil Bogen, M.D., and Wm. Dunn, M.D., Amer. Rev. of Tuber., March, 1941.

PHENOBARBITAL SHOULD BE GIVEN FIRST IN SMALL DOSES

Because of the potential danger of phenobarbital medication, Daniel L. Sexton, M. D., George M. Pike, M. D., and Arthur Nielsen, M. D., St. Louis, declare in *The Journal of the American Medical Association*: "It would seem advisable to administer the drug first in small doses, increasing the dosage gradually until the patient's tolerance is established.

"Withdrawal of the drug at the first appearance of the rash is the safest procedure. Even then a severe constitutional reaction may occur, but for the most part a fatal outcome will be averted. The tolerance of phenobarbital depends on individual susceptibility."

The authors say that they are presenting their report of a fatal case because of the few autopsy records available on this subject. The poisonous effects of phenobarbital for the most part are limited to a skin eruption which subsides soon after the withdrawal of the drug, they state. In an occasional case a severe reaction of the body as a whole occurs in which exfoliative dermatitis is one of the manifestations.

Bronchopneumonia has been reported in the majority of autopsy studies, but otherwise the conditions found are inconstant.

The authors' patient was a 39 year old man who was admitted to the hospital with complaints of stomach pain and vomiting of three months' duration. He had had indigestion with belching and pain after meals for many years in varying degrees of severity, but this became so severe in the two weeks prior to entrance to the hospital that he retained practically no food. He stated that he had not taken any medication or drugs before entrance.

A diagnosis of peptic ulcer was made. Because of vomiting, phenobarbital in solution was given beneath the skin three times daily, and atropine sulfate was also given. The patient did very well on this regimen. On the eighth hospital day soluble phenobarbital and atropine were omitted and regular phenobarbital was given three times a day by mouth.

Improvement continued until the twelfth hospital day, when the patient complained of a feeling of general discomfort and the previously normal temperature rose to 103° F. At this time he had no specific complaints and no eruptions. On the following morning the temperature was 104 F. and the patient complained of sore throat and difficulty in swallowing. The skin was covered with a generalized eruption, consisting of red spotted lesions.

Phenobarbital was immediately discontinued. However, with twenty-four hours the lesions of the skin progressed so rapidly that in many places they marked and involved large areas of the skin, which soon began to shed. The patient was semiconscious until his death three days after the appearance of the eruption. Postmortem examination revealed involvement of the lobes of the lungs.

LOGIC THAT LIMPS

Westchester physicians warn against an effort by compulsory health insurance proponents to promote their "nostrum" under the guise of a national defense measure.

An editorial in the *Westchester Medical Bulletin*, published by the county society, asserts that compulsory health insurance is being urged on the claim that "the examination of draftees has resulted in a large number of rejections for physical defects; that the health of the people generally is bad; that the health of the industrial population, upon which defense industry depends is especially bad; that health is necessary for defense; and that, therefore, we must have compulsory health insurance.

"The only thing the matter with this proposition is that the first three premises are completely untenable and the conclusion is absolutely unrelated to the premises," the editorial says.

It points out that the percentage of rejections of draftees is not high, relatively speaking, despite the fact that acceptance standards are considerably higher than in 1917, and that the vast bulk of the rejections are for defects of teeth, eyes, feet, or general nutrition which would not be affected by compulsory health insurance.

Statistics issued by the Metropolitan Life Insurance Company in January, 1941, are cited to show that death rates in the industrial population have improved faster than those of the population as a whole and that the industrial worker now enjoys as long a life as the average citizen.

The editorial inquires: "Why is it necessary to attempt to justify compulsory health insurance upon such an irrelevant bogus proposition as this?" The answer given is "simply because even its most ardent supporters cannot make it stand on its own feet."—*Journal of The State Medical Society of New York*.

The London hospitals have now received much damage from air raids, but their work has gone on, says a London letter to the J.A.M.A. In a recent raid seven hospitals were damaged. These included a large general hospital and a hospital for women. Six wards of one hospital were wrecked when four bombs struck the building, causing the death from shock of some elderly patients. At another hospital two blocks were completely wrecked and four porters were buried in the ruins. One was quickly rescued, but the others were still trapped at the time of the report. Many hospitals have had their roofs ripped off, their windows shattered, and their walls reduced to a pile of rubble. One hospital endured four direct hits on four successive nights. But despite the worst the raiders can do, the hospitals carry on. Thus, at a well-known hospital the medical superintendent, the medical staff, the matron, and the nurses all showed unflinching bravery through a grueling seven-hour ordeal. Their calm comment when the "all clear" signal was given was: "Well, we didn't lose a single patient."

VITAMIN C DEFICIENCY IN FAILURE OF WOUNDS TO HEAL

Vitamin C deficiency may be a factor in the failure of some human wounds to heal, Drs. Charles C. Lund and John H. Crandon, Boston, declare in the *Journal of the American Medical Association* for February 22 as a result of investigations in which one of them went on a scurvy-producing diet and subjected himself to experimental wounds.

To carry out experiments on the development of human scurvy, which results from a deficiency of vitamin C in the normal person, one of the authors went on a scurvy-producing diet from October 19, 1939, until May 7, 1940.

Three months after the diet was started an experimental wound was made on one side of the back of one of the authors. No difficulty in wound healing could be demonstrated in this experiment, they declare. Shortly after five months the first sign of scurvy developed, and, although there was slight lassitude and ease of fatigue in the fourth and fifth months, marked fatigability began only in the sixth month.

At exactly six months a second incision was made in the corresponding position on the other side of the back. Considerable difficulty was encountered in suturing this experimental wound, a condition that had not been encountered in the first wound. However, it was finally sutured and seemed to heal.

"The cutaneous (skin) sutures were removed on the sixth day and adhesive strips applied to protect the skin from tension," the authors say. "On the tenth day the wound was reopened, and as soon as the skin was divided it was found that the tissues under the skin had not healed at all and that the wound contained a firm dry blood clot."

The clot was scooped out, and the wound was then sutured and the physician given vitamin C by means of injection into the vein. This was repeated daily for the next ten days, and the wound healed promptly at this time. At the end of the second ten days another incision was made across the area of the healed wound that had been pulled apart during the previous operation. This revealed normal healing.

The two men declare that "at just what point between three and six months delayed healing begins we cannot say."

As a result of their observations the two men say that a careful study of the vitamin C status of all surgical patients is valuable.

So This is Progress! Progress is determined not by where you are but where you are headed. We were reading this morning an article on vitamins. One of the case histories was about a poor fellow who had a motely assortment of ailments, one of them being tuberculosis. He was given liberal doses of vitamins and he improved so much that at last the doctor was able to discharge him — *to a tuberculosis sanatorium!*

THE SUPPLY AND DEMAND FOR INTERNS

"At present, probably more than ever previously, a need for clear thinking on the subject of the supply of interns in relation to the demand by hospitals for their services is desirable," *The Journal of the American Medical Association* says in an editorial.

"Some hospitals have been unable to secure any interns and others have not secured their usual number. The demand exceeds the supply. The size of senior classes in approved medical schools has remained almost constant since 1934, while the number of appointments available each year in approved hospitals has steadily increased. Although statistics are not yet available, the number of graduates of European schools seeking internships in this country has diminished greatly within the past year. While the number of interns recruited from this source has never been large, the recent decrease has served to accentuate the disproportion between supply and demand.

"The approved medical schools with their present facilities cannot increase the size of their classes without sacrificing accepted educational standards. Furthermore, the function of medical schools is to educate physicians to supply the medical needs of the country, not merely to develop young physicians to meet the demand of hospitals for low cost house staff personnel. Until approved medical schools are able to train more students (assuming that more applicants could qualify for admission) the supply of prospective interns will not increase.

Adequate rest is still the basis of all therapy of tuberculosis. Charles K. Potter, M.D., Contact, Feb. 1941.

The problem of tuberculosis is concentrated in the immediate environment of the "positive sputum" case. Rep. Milbank Memorial Fund, 1928-1940.

Ability to manufacture anti-scurvy vitamin C in the body and ability to resist invasion of the tuberculosis germ are apparently linked. Man requires vitamin C in his diet because he is unable to manufacture it in his body. Patients with tuberculosis seem to use more vitamin C than normal. Men, monkeys and guinea pigs are all susceptible to tuberculosis and unable to manufacture vitamin C. Dogs and rats are able to manufacture vitamin C and are resistant to tuberculosis. T. W. B. Osborn, M.D., and J. H. S. Gear, M.D., *Nature*, June 22, 1940.

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AMERICAN MEDICAL ASSOCIATION TRIAL: JUDGE'S CHARGE TO JURY

Jury's Findings.—On April 4, 1941, after twelve hours of deliberation, and concluding a trial of eight weeks' duration, a federal district court jury of the District of Columbia brought in a verdict of guilty against the American Medical Association and the Medical Society of the District of Columbia, on charges that these organizations had violated the Sherman Antitrust Law enacted by Congress in 1891. Eighteen individual defendants, including a number of officers of the two medical organizations, were acquitted. On what basis the jury found the societies guilty, and their human agents or representatives not guilty, is not known. Perhaps, because the wording of the Sherman Law, designed some fifty years ago to prevent "restraint of trade," is so loosely phrased and constructed that such a seeming contradiction is permissible.

The question of whether the practice of medicine is a "profession" or a "trade," was not passed on in the recent trial.

Significance of Justice Proctor's Charge to the Jury.—A press dispatch concerning the verdict appears in the press clipping department of this issue (page 294), and gives additional information. Of special interest in Federal Justice James M. Proctor's charge to the jury prior to that body's deliberations. The charge is printed in full in the *Journal of the American Medical Association*, April 12, 1941, page 1700.

Justice Proctor, in answer to requests by the attorneys of both the Government and the defendants, gave instructions to the jury on certain questions of law. Some of the instructions in relation to the status of medical societies and their authority in matters of membership and ethics are of special interest in view of the vast amount of misinformation so often circulated by forces antagonistic to organized and scientific medicine. For the convenience of readers, the following excerpts are given:

The defendants had the lawful right to combine and form corporations and associations for the improvement of the practice of their profession and to advance their interests. They had the right to make reasonable rules and regulations respecting their profession and to ascertain the qualifications and character of their members. They had the right to discipline members who failed to abide by the regulations or rules adopted by the associations in the formation thereof and to suspend or expel from membership any member who failed to abide by the rules and regulations. The fact that the defendants adopted such rules and regulations and disciplined members does not of itself constitute an unlawful combination in violation of the statute. They must have combined together with the intent to injure, obstruct or restrain trade, or they must have intended to do acts the necessary effect of which would be to injure, obstruct or restrain trade.

The individual defendants as physicians had a right to determine with what other physicians they would consult, and their refusal to consult with any particular physician is not of itself illegal.

Physicians have the right to select the hospital in which they choose to treat and operate on their patients; and the refusal of a physician to do business with any hospital because of the composition of its courtesy staff is not of itself illegal.

The defendants American Medical Association and Medical Society of the District of Columbia have the right to adopt rules for just and fair dealing among their members and the right of enforcement of those rules and regulations by such reasonable penalties as they may provide for violation thereof.

The defendants had the right to reach and attempt to reach their objective of advancing the interests of the medical profession by legitimate persuasion and reasoned argument, and to this end they had the right to tell their side of the story and to persuade others, including the Washington hospitals, other physicians, members of Group Health Association, Inc., and the public to utilize and use the defendants' method of practicing medicine, and to use peaceful persuasion, publicity, articles in the press, in publications of defendants, including *The Journal of the American Medical Association*, and all lawful propaganda to have their methods of practicing medicine prevail over those of Group Health Association.

The defendants had the right to write letters or other statements among themselves or to other members of the profession or to the public generally, expressing disapproval of or opposition to Group Health Association and the form of medical service offered by it.

The defendants were entitled, through legitimate persuasion and reasoned argument, to endeavor to support and advance the interests and extension of that type of medical practice believed by the defendants to be in the public interest, without regard to whether such acts hindered Group Health Association, its doctors, members or operations, or any other type or method of medical practice. If they did not go further to conspire to restrain Group Health Association there would be no offense.

I charge you that the defendants have the lawful right, through action taken in their meetings and conferences, to formulate and adopt rules of medical ethics for the control and government of themselves and the members of their societies in the practice of their profession, and the support and maintenance of such principles of medical ethics by legitimate persuasion and reasoned argument or by enforcement of Society rules, laws and regulations, without more, would not constitute unreasonable restraints against Group Health Association, its doctors or members.

Any doctor who voluntarily joined the defendant medical societies was required to comply with the constitution, rules and regulations thereof. No doctor would have the right, as against the wishes of the particular society, to retain membership therein regardless of how valuable or advantageous such membership might be to him, and at the same time willfully violate any provision of its constitution, rules or regulations.

If a doctor desires to retain membership he is bound to obey the constitution, rules and regulations, since membership therein is entirely voluntary; and if, as a result of his nonobservance, he suffers discipline and possible expulsion from the society, and injury, damage or restraint thus suffered by him or by any corporation by which he might have been employed would, without more, not constitute a violation of the statute.

The Washington hospitals are private institutions under private management and control, and the lawful authority to constitute the medical staffs of such hospitals is vested in the governing boards thereof. Hospitals have a lawful right to make such reasonable rules and regulations for the operation of the hospitals as to the authorities thereof may seem in their best interests. They are lawfully entitled to require obedience to such rules and regulations by all persons dealing with said hospitals, including doctors permitted by the hospitals to practice their profession therein.

The Washington hospitals had the lawful right, if they so desired, to adopt and enact a rule confining their medical staffs to members of the local medical societies, and any restraint resulting thereby to Group Health Association, its doctors, members or operations, would not in itself be a violation of the Sherman Act.

A member of the medical profession duly authorized by law to practice his profession in the District of Columbia is not by reason thereof entitled to practice in any of the private Washington hospitals. Permission to practice in such a hospital is not a right on the part of an applicant doctor but is only a privilege which can be extended or withheld from him at the will of, or in the discretion of, the particular hospital.

If the Washington hospitals or any of them believed that it was in the best interests of such hospital to adopt and enforce a rule confining appointments to the medical staff to members in good standing of local medical societies any such hospital had a lawful right to adopt and enforce such rule, and any resulting injury or restraint occasioned thereby to a particular doctor or other person would not be a violation of the statute.

The defendant American Medical Association had the lawful right, on request of a hospital, to inspect it for the purpose of approving or disapproving it for intern or resident training, and it had a lawful right to approve or disapprove such hospital based on the inspection so made.

The American Medical Association was lawfully entitled to present for the consideration of the hospitals inspected the so-called Mundt Resolution concerning the selection of medical staffs exclusively from the members of local medical societies, and such action on the part of the American Medical Association would not of itself constitute an act of coercion as charged in the indictment. . . .

A defendant does not become a party to a criminal conspiracy simply because he is a member of an association which might so conspire, or because he attends meetings of such organization where such conspiracy may be discussed, nor does he become a party to such conspiracy because he has knowledge of its existence or because he may even approve such conspiracy and its unlawful purpose. Before he can be found to be a member of a conspiracy it must appear that he knowingly and intentionally participated therein with the purpose and intention of aiding and furthering it; and you must find, before you can convict such defendant, that such intent existed beyond a reasonable doubt.

It is not unlawful to conspire and combine to effectuate a lawful purpose by lawful means. The defendants could lawfully combine to protect and support their medical organizations, their methods of professional practice, and the principles of medical ethics, by legitimate persuasion and reasoned argument or by any other lawful means. . . .

If it be true, as defendants claim, that the District Society, acting only to protect its organization, regulate fair dealing among its members and maintain and advance the standards of medical practice, adopted reasonable rules and measures to those ends, not calculated to restrain Group Health, there would be no guilt, though the indirect effect may have been to cause some restraint against Group Health. It would be justified if but an incidental result of reasonable regulation of the membership and affairs of the organization, for the statute comprehends only such restraints as do directly and unreasonably affect freedom of competition in the trades and professions.

In joining the District Society members assumed the duty of compliance with laws and regulations thereof. The right to practice medicine gave a doctor no right to be a member of the Society. Discipline and control of members of a society, within reasonable bounds, are essential. When applied in good faith, under fair rules, without ulterior purpose to injure the business of a member or others, there is no wrong. However, such rules and regulatory actions cannot be justified where the real purpose, or the natural results, are to interfere with free competition. . . .

The hospitals had the lawful right to prescribe rules and regulations governing the use of their facilities by doctors and patients. In their boards was vested the authority to decide what physicians would be allowed the privileges. A doctor had no right to demand them. To grant or refuse the same rested solely with the hospital. Therefore, if denial of privileges to Doctor Selders, or other members of the Group Health staff, represented the voluntary decision of the boards, no question would arise as to the legality of their acts. However, if refusal was arbitrary and to serve a criminal conspiracy against Group Health or their doctors, it would violate the statute. . . .

WHAT THE PEOPLE SAY

Public opinion was sounded out on some interesting points in the recent survey of the care of the sick in Rochester. As noted in the *J.A.M.A.*, one of the questions was to determine the attitude of the public toward medical insurance.

While a decided majority expressed themselves in favor of some type of medical insurance, it was found when these replies were broken down by income classes that few of those in favor of it could afford such insurance and that the "theoretical potential market" for such insurance was only about 17 per cent of the total population. Ninety-five per cent of the public gave a negative answer to the question "Has your family every had any kind of difficulty in securing it when they needed medical, hospital, or nursing care?" Ninety-two per cent stated that they did not know of any family in Rochester that needed such care and was unable to get it.

It may be significant of the confused character of the propaganda for "socialized medicine" that 43 per cent when asked "What, in your opinion, does the term 'socialized medicine' mean?" replied "Don't be suggested by the fact that 80 per cent stated that they had little idea of the meaning of such a term.

That the "family doctor" has not disappeared may be suggested by the fact that 80 per cent stated that when they wished to call a doctor they would "usually go to the same doctor" and that 95 per cent of them preferred an M.D. to any other type of practitioner. —New York State Journal of Medicine.

News of the State

Ogle County Medical Society met on April 24th at Rochelle. Chester Coggeshall gave an illustrated talk on "Treatment of Diabetes Mellitus."

Henry L. Jaffe talked to the President's Civic Council of Champaign-Urbana on April 30th on "Relationship of Tumor Clinics to the Cancer Control Program."

Leon Unger addressed the Society for the Study of Asthma and Allied Conditions in At-

lantic City on May 3rd, subject, "The Treatment of Asthma by the Sulfonamide Drugs."

Ralph Reis and C. A. Aldrich addressed a Maternal Welfare Meeting sponsored by the Knox County Medical Society on May 13th. Doctor Reis spoke on "Why Not Cesarean Section" and Doctor Aldrich spoke on "Habits Belong to Children."

Emmet Keating addressed a group of students at the Carl Schurz High School on May 6th, subject, "The Seven Ages of Man."

Herbert E. Schmitz spoke on "Carcinoma of the Uterus" before the Gynecological Department of the Roseland Community Hospital on May 6th.

Philip Kreuscher addressed the Vermilion County Medical Society on May 6th, subject, "Injury and Deformity of the Spine with Differential Diagnosis and Treatment."

Frank C. Murrah spoke before the Jefferson County Bar Association on May 8th on the subject "The Doctor in Court."

Chester C. Guy addressed the pupils of Englewood High School on "Medicine as a Profession," on May 15th.

Harry A. Oberhelman spoke in a "Career" program at the Austin High School, May 21st. His subject was "Medicine as a Profession."

C. J. Barborka spoke before the annual meeting of the White Gross Guild of the Methodist Hospital, Fort Wayne, Indiana, on May 13th. The title of his address was "Nutrition and Public Health."

Louis N. Katz, Director of Cardiovascular Research, Michael Reese Hospital, delivered the first lecture of the Dr. Samuel D. Gross Lectureship of the Phi Delta Epsilon Fraternity, at the University of Louisville Medical School on May 2nd. The subject of his talk was "The Mechanism of Heart Failure."

J. Sanford Kruglick addressed a group under the auspices of the Jane Addams Housing Project, Chicago, May 20th "General Health" with reference to tuberculosis prevention and control was the subject of Dr. Kruglick's talk. Two films, "Good Bye Mr. Germ" and "Let My People Live," furnished by the Institute, were shown.

Samuel M. Feinberg gave a series of lectures on Allergy at the University of Michigan, Ann Arbor, in connection with the Annual Michigan Postgraduate Program for graduates in Medi-

cine on May 13th. On May 14th, he spoke at Gary, Indiana at the Tenth District Councilor meeting on the subject of "Nasal Allergy."

Theodore B. Bernstein spoke before the Tenth District Councilor Meeting at Gary, Indiana, on May 14th, subject, "Nasal Allergy; Its Management."

M. J. Seifert spoke before the Dept. of Biology, Lakeview High School on May 19th. Subject, "The Gastro-Intestinal Tract."

J. C. Schmidtke delivered the address on May 22 to the graduating class of Sherman Hospital Training School at Elgin, Illinois.

J. P. Greenhill spoke before the New Orleans Obstetrical and Gynecological Society and the Orleans Parish Medical Society in New Orleans on May 16, subject, "The Practical Aspect of Gynecologic Endocrinology."

Harry Culver and John I. Brewer were invited to address the Whiteside County Medical Society on May 27th. Doctor Culver spoke on "Tumors of the Urinary Bladder" and Doctor Brewer discussed "Gynecological Diagnoses."

James H. Hutton addressed the graduation class of nurses from the Ryburn King Hospital, Ottawa, on May 23rd.

John R. Wolff addressed the Logan Square Lodge Women's Auxiliary B'nai B'rith of May 24th, subject, "Prevention of Cancer."

Leon Unger was invited to speak before the South Chicago Hospital Guild on May 28th on the subject, "The Invisible Army."

Jean McBean was invited to address the Nash School Parent Teacher Association on May 28th. She also will address a group of mothers on June 16th on the subject "Sex Education."

James J. Donahue presented the scientific program before the Madison County Medical Society on June 6th speaking on "Diseases of the Gastrointestinal Tract."

The Effingham County Medical Society will hold a nonscientific meeting on June 14th at the Veterans of Foreign Wars Home, Effingham, Illinois, starting with a buffet supper at 6:30 o'clock, and appropriate entertainment.

Deaths

WILLIAM JOSEPH ANDERSON, Chicago; Chicago Homeopathic Medical College, 1898; Rush Medical College, Chicago, 1903; fellow of the American College of Surgeons; past president of the Dickinson County (Mich.) Medical Society; aged 64; died in

February at the Veterans Administration Facility, Hines, Ill.

WILLIAM JOHN BENNER, Anna, Ill.; Washington University School of Medicine, St. Louis, 1903; member of the Illinois State Medical Society; served during the World War; past president and secretary of the Union County Medical Society, and the Southern Illinois Medical Association; formerly member of the school board and city council; aged 64; died, March 3, of brain tumor.

LOUIS BLUMENKRANZ, Chicago; Northwestern University Medical School, Chicago, 1910; aged 52; was killed, March 5, in an automobile accident near Ypsilanti, Mich.

BENJAMIN F. BRAYFIELD, Christopher, Ill.; Kentucky School of Medicine, Louisville, 1892; aged 79; died, March 5.

THOMAS BURGESS, Trenton, Ill.; Rush Medical College, Chicago, 1893; aged 72; died, February 21, in the Deaconess Hospital, St. Louis.

FRANKLIN ALBERT BUTTERFIELD, Oregon, Ill.; Rush Medical College, Chicago, 1880; member of the Illinois State Medical Society; aged 86; died February 17, in a hospital at Freeport.

PERCIVAL LEMON CLARK, Chicago; Bennett College of Eclectic Medicine and Surgery, Chicago, 1889; aged 74; died, February 2, in Oklahoma City of myocarditis following an operation on the prostate.

GEORGE CHARLES DITTMANN, Chicago; College of Physicians and Surgeons, School of Medicine of the University of Illinois, 1902; member of the Illinois State Medical Society; aged 65; died, March 1, in the Swedish Covenant Hospital, of carcinoma of the stomach.

JOHN HENRY FENELON, Bloomington, Ill.; Rush Medical College, Chicago, 1889, past president of the McLean County Medical Society; aged 76; on the staffs of the Mennonite Hospital and St. Joseph's Hospital, where he died, March 3, of uremia and myocarditis.

JOHN BISHOP HAZEL, Saybrook, Ill.; Hospital College of Medicine, Louisville, Ky., 1906; served during the World War; aged 60; died, March 25, of cerebral hemorrhage.

GILBERT HAMILTON HENRY, El Dara, Ill.; College of Physicians and Surgeons, Keokuk, Iowa, 1893; aged 79; died, February 24, of diabetes mellitus and arteriosclerosis.

HENRY JOHN HEUSINKVELD, Fulton, Ill.; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1883; an Affiliate Fellow of the American Medical Association; for many years member of the board of education, and health officer; aged 81; died, March 13.

WILLIAM EDWIN KIDD, Oak Park, Ill.; Queen's University Faculty of Medicine, Kingston, Ont., Canada, 1891; aged 70; died, March 19, in the Chicago Memorial Hospital of arteriosclerosis.

PETER GEORGE KOKENES, Springfield, Ill.; St. Louis University School of Medicine, 1927; member of the

Illinois State Medical Society; aged 43; died, March 7, in St. John's Hospital of cerebral hemorrhage.

EMIL F. R. LIEBRECHT, Chicago; Jenner Medical College, Chicago, 1912; aged 78; died, March 23, in the Illinois Masonic Hospital of coronary thrombosis.

HENRY AUGUST LONG, Effingham, Ill.; St. Louis College of Physicians and Surgeons, 1907; member of the Illinois State Medical Society; formerly mayor of Effingham; aged 58; died, March 24, in St. Anthony's Hospital of hypertensive cardiorenal disease.

SHEFFIE R. MAY, Mount Zion, Ill.; College of Physicians and Surgeons, Keokuk, Iowa, 1880; aged 81; died in February.

BENJAMIN NEWTON NOVY, Chicago; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1906; served during the World War; aged 58; died, March 5, in the Michael Reese Hospital of gastric ulcer with hemorrhage.

HARLEY PARKER, Chicago; Hering Medical College, Chicago, 1895; aged 66; died, March 3.

LESLIE RUTHERFORD, Peoria, Ill.; Rush Medical College, Chicago, 1901; president of the city board of health; past president of the Peoria City Medical Society; chief physician for the draft board; at various times president of the staffs of the Proctor Hospital and the Methodist Hospital; aged 61; died, March 28, in the James M. Jackson Memorial Hospital, Miami, Fla., of cerebral hemorrhage.

LUCIEN SMITH, Chapin, Ill.; Rush Medical College, Chicago, 1899; served during the World War; aged 65; was found dead, March 12, of coronary occlusion.

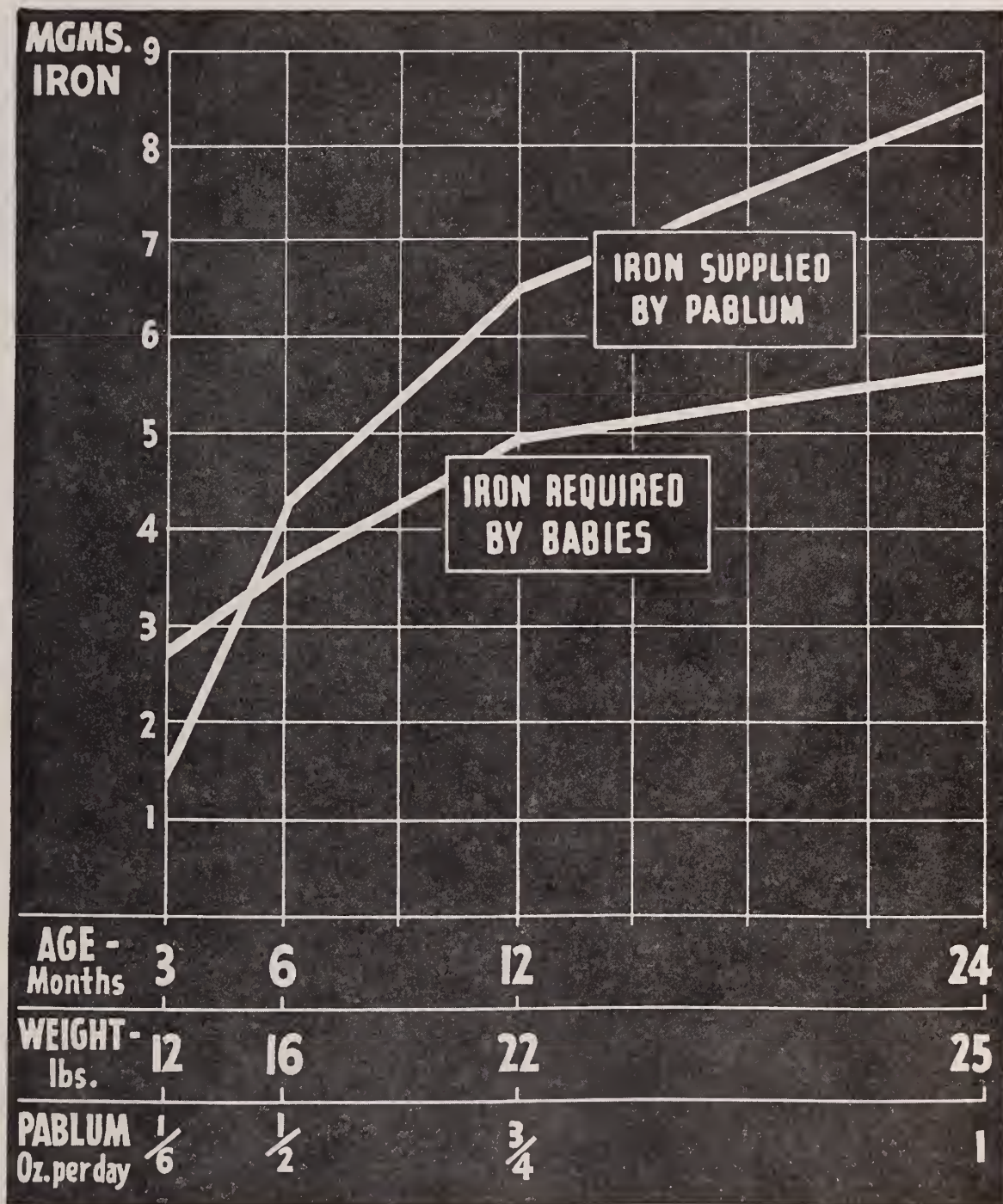
AMUEL B. SPACH, Kenilworth, Ill.; Chicago Homeopathic Medical College, 1886; College of Physicians and Surgeons of Chicago, 1893; member of the Illinois State Medical Society; aged 83; died, February 11, of coronary thrombosis and arteriosclerosis.

JAMES WALLACE WEIR, Sparta, Ill.; Missouri Medical College, St. Louis, 1882; member of the Illinois State Medical Society; aged 90; died, March 2, in the Community Hospital of pneumonia.

GEORGE FRANCIS WOODRUFF, Joliet, Ill.; Reliance Medical College, Chicago, 1909; aged 75; formerly on the staff of the Silver Cross Hospital, where he died, February 16, of lung abscess.

JESSE M. YONAN, Chicago; Rush Medical College, Chicago, 1895; member of the Illinois State Medical Society; aged 73; died, March 13, of cerebral hemorrhage, arteriosclerosis and arthritis.

CHARLES S. YOUNG, Geneseo, Ill.; Detroit College of Medicine, 1896; member of the Illinois State Medical Society; past president of the Henry County Medical Society; past president of the Iowa-Illinois Central District Medical Association, 1918-1919; for many years president of the board of the Henry County Tuberculosis Sanatorium, Rock Island, and the J. C. Hammond City Hospital; health officer of Geneseo from 1912 to 1918; for many years a member of the high school board; local surgeon for the Rock Island Railway; aged 67; died, March 9, of chronic myocarditis.



**DAILY AMOUNT OF IRON REQUIRED BY NORMAL BABIES,
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The infant starts life with a store of iron. There is a steady drain of this reserve during the first few months. Because both breast milk and cow's milk are poor in iron, it is becoming the practice to feed iron-bearing foods at as early an age as possible. As shown in the above chart, from about the fourth month Pablum alone supplies more than the infant's daily iron requirements. In this chart, the require-

ments are based on the conservative estimate of the Council on Foods, i.e., 0.5 milligram per kilogram of body weight. The iron supplied by Pablum is calculated on the basis of 8.5 mg. per ounce. On account of its thorough cooking Pablum is well tolerated, having been fed without gastrointestinal upset as early as the first month. Bibliography on request. Mead Johnson & Co., Evansville, Ind., U.S.A.

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ASSISTANCE OF THE AMERICAN MEDICAL ASSOCIATION IN CLASSIFICATION AND PROCUREMENT OF PHYSICIANS FOR MILITARY SERVICE

The Adjutant General of the Army has sent the following instructions to the Surgeon General and to each corps area and department commander:

1. The following plan has been approved and will be placed in operation at such time as the War Department may direct.

(a) The American Medical Association will prepare and maintain a roster of civilian physicians, classified as to professional specialties and proficiency, who have agreed to accept commissions in the Army of the United States when needed for immediate active duty during a national emergency.

(b) The Surgeon General will designate one or more medical officers of the Regular Army who will be placed on duty at Headquarters, Sixth Corps Area, as representatives of his office in all matters pertaining to the Medical Corps Reserve and the American Medical Association.

(c) Corps area commanders will report, at

times specified by the War Department, the number of Medical Corps Reserve officers under their assignment jurisdiction who are available for active duty.

(d) Vacancies in allotments made to any corps area by the War Department that cannot be filled by the detail of a qualified Reserve officer under the assignment jurisdiction of the corps area commander will be promptly reported to the War Department, which will cause them to be filled from Medical Corps Reserve officers in the Army and Service Assignment group, or by adding these vacancies to the allotment of other corps areas having a surplus.

(e) If no qualified Reserve officer can be found, the Surgeon General will notify his representative at Headquarters, Sixth Corps Area, as to the qualifications desired and the location and grade of the vacancy. The representative will then secure recommendations from the American Medical Association and forward all information to the appropriate corps area commander, notifying the War Department of the action taken. The corps area commander will immediately cause the candidate to be given a physical ex-

(Continued on page 26)

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for

Conditions Resulting from Hyposecretion and Hypomotility

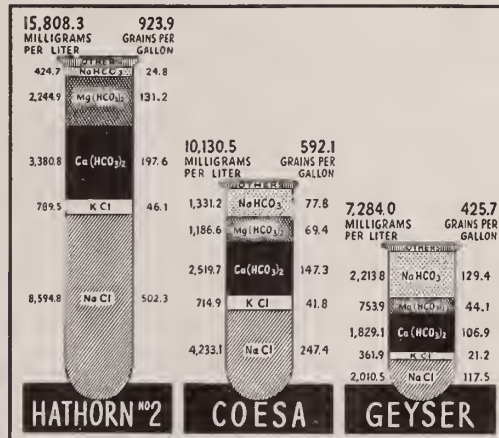
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of the stomach and intestinal tract, resulting from hyposecretion and hypomotility. Hathorn a natural purgative and cathartic is taken upon arising. The adult dose is one pint, taken at room temperature. As a cathartic it is helpful in arthritis.

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ARE EXTRA EASY
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*Not merely strained like other baby foods, but strained and then *specially homogenized*. That is why Libby's Baby Foods—vegetables, fruits, cereal, soups—are so unusually smooth and fine in texture, extra easy to digest. Special homogenization is an exclusive Libby process that breaks up cells, fibers and starch particles, and releases nutriment for easier digestion. U.S. Pat. No. 2037029.

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amination and, if found qualified, will secure from the applicant a properly completed application for commission (W. D., A. G. O. form 170). All papers will then be forwarded to the Adjutant General for final action by means of air mail and "Immediate Action" stationery when necessary.

(f) Corps area commanders are not authorized to grant waivers for physical defects in these instances but may reject a candidate when found physically disqualified, notifying the Adjutant General of the action taken.

(g) On receipt of a properly executed oath of office, the corps area commander will cause orders to be issued placing the appointee on immediate active duty.

(h) No appointments will be made under this authority of applicants over 55 years of age.

(i) The appearance of the candidate before an examining board as prescribed in AR 140-5 will be waived in these cases.

2. The Surgeon General and corps area and department commanders will complete all arrangements necessary to place the plan in operation without delay when directed by the War Department.

Jour. A.M.A., Feb. 22, 1941

Book Reviews

ANUS. RECTUM. SIGMOID COLON DIAGNOSIS AND TREATMENT. By Harry Ellicott Bacon, M. D. 507 Illustrations in the Text mostly original. Second Edition. Philadelphia, Montreal — London. J. B. Lippincott Company. 1941. Price \$8.50.

This work is of especially informative character, and should prove of value to all proctologists as a work of reference. It is a very full and comprehensive bibliography attached to each chapter.

AGE MORPHOLOGY OF PRIMARY TUBERCLES. By Henry C. Sweany, M. D. Springfield, Illinois. Charles C. Thomas. 1941. Price \$5.00 Postpaid.

HEMORRHAGIC DISEASES PHOTO-ELECTRIC STUDY OF BLOOD COAGULABILITY. By Kaare K. Nygaard, M. D. Illustrated. St. Louis. The C. V. Mosby Company. 1941. Price \$5.50.

The author states that the primary object in the first part of this work to present an outline of various approaches to the measurement of blood coagulation, to describe the photo-electric principle in its applicability to problems related to medical investigations in general and to the problem of blood coagulation in particular, and further to present detailed analysis of factories influencing the velocity of blood coagulations crystalizing in standard methods for investigation of the coagulability of the blood.

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Chicago Heights.....Central Adjustment Bureau
Collinsville.....Merchants Credit Bureau
Danville...Adj. Dept., Credit Bureau of Vermilion Co., Inc.
Decatur.....Macon County Credit Rating Service
DeKalb.....Lincolnway Credit Bureau, Inc.
Dixon.....Adjustment Service Bureau
Elgin.....Elgin Business Men's Association
Freeport.....Associated Retail Credit Men, Inc.
Galesburg.....Illinois Collection Service
Joliet.....Collection Service Bureau

Kankakee.....Central Adjustment Bureau
LaGrange.....The "Q" Suburban Credit Bureau
Moline.....Interstate Adjustments, Inc.
Monmouth...Monmouth Business Men's Association
Morris.....Grundy Adjustment Service
Oak Park.....Reliance Credit & Business Service
Ottawa.....Central Adjustment Bureau
Peoria.....Allied Adjustment Company
Quincy.....Illinois Collection Service
Ridgway.....Credit Bureau of Gallatin County
Rochelle.....Rochelle Business Men's Association
Rockford.....Commercial Collection Company
Rock Island...Merchants Credit Assn. of Rock Island County
Springfield...Adj. Dept., Springfield Credit Bureau, Inc.
Streator.....Central Adjustment Bureau
Waukegan.....Merchants Credit Association, Inc.

SPREADING PERITONITIS COMPLICATING APPENDICITIS

Bower points out that the causes for the high mortality of acute appendicitis, as revealed by six surveys, are delay in hospitalization and laxatives. Results of a prophylactic campaign showed a consistent reduction of the mortality in each survey. A prophylactic campaign has been conducted since 1933 throughout the state, and the first statewide survey was completed April 1, 1940. The results indicate that patients do not die from acute appendicitis but from spreading peritonitis, that the prophylactic campaign is the surest method of reducing the mortality and that in considering a plan for prevention of deaths from appendicitis-peritonitis the prophylactic removal of the appendix in the very young must not be overlooked. Deaths can be eradicated by instruction in the schools, as the disease is one of youth. Most deaths occur between the ages of 10 to 20. In Philadelphia high school students have been instructed for ten years, in Pennsylvania for only five. The mortality is 2.44 per cent for Philadelphia and 3.39 per cent for Pennsylvania. Spreading peritonitis causes 92.4 per cent of the appendicitis deaths. The abstracts of 38,085 clinical records show that 1 in 271 died of acute appendicitis, 1 in 49 from appendical abscess and 1 in 4 from spreading peritonitis. Patients admitted to hospitals with acute appendicitis with an intact appendix do not die from the disease, they die a catastrophic death. Of 658 deaths (621 the result of spreading peritonitis) 118 were catastrophes: 29 unavoidable, 89 avoidable. The 29 unavoidable catastrophes represent the hazards coincident to any group of comparable size. Of the avoidable deaths, errors in surgical management were responsible for 71 and errors in diagnosis for 18. Some of the common errors in diagnosis are pneumonia, intestinal obstruction, ruptured cecum, ruptured duodenal ulcer, ruptured gastric ulcer, acute salpingitis, typhoid, diabetes, myelogenous leukemia and otitis media. The common errors in management are appendix ruptured on removal, anesthetic deaths, hemorrhage and post-operative venoclysis. Embolism, cardiac dilatation, coronary disease, myocarditis, thrombosis, atelectasis,

apoplexy, pulmonary infarct and uremia caused the 29 unavoidable deaths. Rupture of an acutely inflamed appendix at operation was responsible for the greatest number of the avoidable deaths. This catastrophe occurred once in each 200 patients operated on in the presence of an intact appendix. If a surgeon at operation finds a perforated appendix, if he is doubtful as to whether or not the serous coat is intact or if hemorrhage cannot be controlled by ligature, the insertion of drains is justifiable. In 71 hospitals of the 181 surveyed, 118 operators did not drain the peritoneal cavity following removal of a perforated appendix in 126 patients and 74, or 58.73 per cent, died. What happens when perforations occur early and are accompanied by peritoneal trauma is seen by the following: Twelve of 70 patients operated on lived, 80 per cent of those that died received laxatives. They were operated on forty-eight hours after the onset of symptoms. The average time between perforation and death was 168 hours. These patients were operated on twenty-nine hours earlier and died seventy-two hours sooner than those with localizing processes. Why? Because the vulcanizing plastic-lymph patch was blown off or the cemented intestine or omentum was detached by laxative induced peristalsis. Of 1,118 patients with acute perforations operated on sixty-nine hours after the onset of symptoms 269, or 24.6 per cent, died on an average of two hundred and thirteen hours after the onset of symptoms. Of 1,154 patients admitted with subacute perforations — localizing processes — and operated on ninety-eight hours after the onset of symptoms 281, or 24.35 per cent, died three hundred and fourteen hours after the onset of symptoms. The mortality among 1,080 localized abscesses was 1.2 per cent. Among the 16,046 patients with localized masses the mortality was 0.06 per cent.

More than three million men, women and children have died of tuberculosis in the United States during the last thirty years. Over two million more, remarks the *Kentucky Health Bulletin*, would have died if the mortality rate of thirty years ago had continued to prevail.

WELBORN HOSPITAL CLINIC

Evansville, Indiana

General Surgery

James Y. Welborn, M.D., F.A.C.S.
Mell B. Welborn, M.D., F.A.C.S.
Robert A. Royster, M.D.

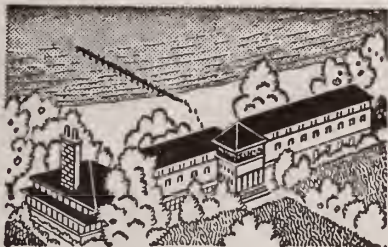
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THE PROPER PERSPECTIVE

A letter was received at headquarters recently from an Indiana physician, a member of the Reserve Corps now stationed in one of the army training camps. He found considerable fault with conditions existing there and among his complaints was one to the effect that medical men are not immediately assigned to medical duties, etc. The letter was referred to the M-Day committee and their reply in part is as follows:

"Attention is invited to what we deem extenuating circumstances which it may be expedient to consider in connection with the facts. The nation is engaged in a stupendous undertaking — one almost unparalleled in its history. It is of such magnitude that its objectives can not come to fruition overnight. Of necessity there is delay, duplication of effort, and lost motion.

"Thinking of the preparedness program in the light of a blue-print, to be conceived, adopted, and put into execution, it becomes an evolutionary process to be accomplished step by step. Our perspective, then, must go beyond the individual and the individual group.

"The strength of the Regular Army and National Guard must be increased; many kinds of units, some of them entirely new, organized and distributed over widely remote areas and far-flung bases; some are to become training cadres into which will be absorbed trainee contingents to the number of 800,000 a year for five years.

"We must think in terms of facilities to be provided for all this: billeting and housing, feeding, supplying, transportation and storage, hospital provision, and the accommodating of the various branches and arms of the service to the needs of the moment. Army units must be manned with trained personnel in advance of the induction of the trainee contingent.

"When we consider that the composition, organization, tactical and administrative aspects of the army are so complicated and complex as to be almost beyond

the ability of a single mind to comprehend, we can in some small measure appreciate that much marking of time is necessary before full stride of the program is reached. We are constrained to believe that after all it is in the hands of capable leaders who have given the best part of their lives to the service of our armed forces, and that in the end we shall have reason to conclude this leadership will not be found wanting.

"There is one other thought: We have been particularly impressed by the temerity of some physicians who would condescend to enter the service of their country if they could be given on entrance the grade of major or lieutenant-colonel. Such a puerile suggestion would be amusing if it were not tragic. Those not conversant with what responsibility an officer of field grade carries do not realize that there must be a reason why an officer devotes 20-25 years of intensive study and service before he is considered equal to the task of a major, lieutenant-colonel and colonel; that such an officer must have technical, tactical, and administrative knowledge which can come only from years of experience; that the further up in rank a medical officer gets the farther he is likely to be from the professional side. The knowledge of how a medical unit functions can come only with the knowledge of the tactical and operative functions of the units which the medical unit is to serve. This serves to illustrate how futile it is to attempt to discuss such problems with younger men of the profession who are pleased to observe that all the training a medical officer needs can be had within a period of six weeks. It is a good deal like the young West Point graduate who feels he should be started off with the grade of major. If that were feasible, why would the War Department waste 20-25 years of an officer's time and so much money in qualifying young officers. It is a long way from a subaltern to a general officer and a very expensive journey. Let us keep our proper perspective."

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Wm. L. Brown, M.D., Director

TREATMENT OF WAR BURNS

At the Royal Society of Medicine, Surgeon Rear Admiral Wakeley opened a discussion on the treatment of war burns, as reported in a London letter to the J.A.M.A. At the outbreak of war it was thought that the treatment would be simple, and the use of tannic acid was regarded as completely satisfactory. But this proved far from true in the navy, where many casualties from burns occurred.

War burns differed from those of civilian life in that they might not be treated for many hours or even days. On a warship only first-aid treatment could be given in the majority of cases. Most of the burns involved the face and hands and were due to gun flash, bomb flash, incendiary bombs, or gasoline. First-aid treatment consisted in morphine, warmth, and fluid to counteract shock. If this was marked, plasma transfusion was given. Secondary shock occurred some hours after the burn and accounted for 80 per cent of the deaths.

The most important factor in it was the loss of plasma from the burned surface. The blood might be so concentrated that the hemoglobin rose to 140 per cent. The best treatment was to replace the plasma protein. Given intravenously, plasma raised the osmotic pressure sufficient to restore the normal distribution of fluid between the vascular and interstitial components. Whole blood transfusion and intravenous physiologic solution of sodium chloride or sterile water were contraindicated. The amount of plasma necessary must be estimated by frequent blood examinations.

Wakeley agreed with Aldrich that acute toxemia from burns was due to streptococcal infection. It did not appear for several days and could be prevented by primary cleansing before coagulation. It was not nearly so common as in the last great war, for which no doubt coagulation was responsible.

For extensive burns with toxemia, saline baths had proved valuable. In first- or second-degree burns, sepsis could be prevented if coagulation treatment was given at once and adequate cleansing and coagulation followed on arrival at a hospital.


With regard to local treatment, he favored gentian violet jelly with merthiolate (1:5,000), which could be applied to the burned areas without any cleansing.

The application should be liberal, for it was painless and even soothing. It would seal off the burned area and form a crust which remained until arrival at a hospital. Local treatment should not be given in the presence of shock. Tannic acid should not be used on the hands and face.

In the hospital the treatment of shock was instituted, and plasma banks and dried plasma were playing an important part. Oxygen administration was helpful. After shock had been treated the patient was taken to a warm room and anesthetized with gas and oxygen.

The burned area was thoroughly cleansed with saline solution, dried with an electric hair dryer and two applications of an aqueous solution of triple dye (2 per cent gentian violet, 1 per cent brilliant green, and 0.1 per cent acriflavine) sprayed on the surface. This produced a thin, supple, adherent tan, which loosened about the eighth day and gradually fell off, leaving a healed area. If the burn was extensive and of third degree, the area should be excised and skin grafted.

Without cooperation of the people a doctor can no more prevent tuberculosis than he can prevent accidental drowning. U. S. Pub. Health Serv. Rep., Dec. 1940.

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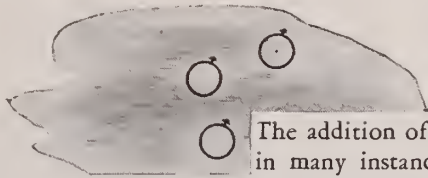
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